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Chacoan Roadways in the Goodman Point Region in Southwest Colorado

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By

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ABSTRACT

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By

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The interplay of practical and symbolic function is not often studied within the context of prehistoric roads or trails, and such an approach within the Southwest could provide researchers with an analog for future comparative studies. Roads associated with Casa Negra, Casa Shields, and Goodman Point pueblos, located within Hovenweep National Monument in Southwest Colorado, offer the opportunity for this type of research. An initial hypothesis is that the associated road and trail network was intended to facilitate movement between these pueblos and neighboring habitation sites and symbolized group identity.

For the purpose of this research, practical function is defined as holding practical purposes such as facilitation of integration, travel for immediate needs for resources like water, and political expression. Symbolic function is defined as a specific type of function that is related to cosmological ideals or individual or group identity. To establish a functional interpretation of the roads, GIS analysis put the roads and trails in the context of the greater landscape and their associated features. Spatial analysis was also supplemented with ground survey to observe the morphology of the roads and trails as well as to identify additional paths. To establish a symbolic function, habitation and ritual

sites that can be related to the road based upon a spatial analysis have been analyzed along with a comparative study with Chaco Canyon.

The conclusions that this research establishes provides context for future research concerning function and symbolism within the lived landscape. Additionally, the results of this research will benefit comparative studies of prehistoric roads and trails within the Southwest as well as to build on the growing understanding of the Hovenweep National Monument.

Chapter 1: Introduction

Roads and trails are often viewed through a modern lens in which they are viewed solely as corridors of travel. While it is easy to view them as mere routes connecting a few points, or even multiple points, there is another important dimension to a more complex understanding these constructed features. Landscape archaeology proposes different philosophies that interprets roads and trails as features with deeper and culturally-specific symbolism. Such meanings are established through construction of these roads between sites, use of these paths for the purposes of ceremonies or travel, or mere observation of what these roads symbolized (e.g. connectivity or integration). In this sense, roads and trails, while used for travel, also stand as constructed landscapes, landmarks symbolizing different meanings to those who travel and experience them.

To extract these meanings from roads and trails, researchers must first observe them as features that are part of the landscape and understand the importance of experiences in their establishment. Observation of road or trail morphology and identification of associated features (e.g. start and end points) help in understanding the intended use of the path and thus, associated meanings. Understanding function can also assist in identifying symbolic elements embedded in the paths. This is because use of these paths establish symbolic elements, whether they are implicit or explicit. Application of related case studies and theories, such as those put forth by Ingold (1993), Johnson (2012), Van Dyke (2008), Knapp and Ashmore (1999), Fowler and Stein (1992), Vivian (1997b), and Tilley (1994) helps broaden the discussion on the pathways.

Because associated features are important in obtaining possible descriptions of their meanings, the application of GIS analysis in measuring the least-cost path between points can help in identifying possible destinations for paths that don't show direction connections. This is not to suggest the best path between two points is necessary, but this tool can allow us in examining possible destinations for road segments that don't appear to have a direct destination. Additionally, because this analysis shows the best path between two points, it can provide interesting discussions of intention if the direct path is very "costly." While measuring a cost-path between two points can help in determining possible destinations for segmented roads, mapping of the sites, roads, and trails can show us in a much broader view what may rest along these paths, more so than can be obtained from a survey.

Because roads and trails are quite prominent in the archaeology of Chaco Canyon, New Mexico this locality provides a useful context for exploring the general topic on the landscape of movement. However, as it is not possible to know what the landscape had looked like during the habitation of most archaeological sites or to fully understand what the individuals were thinking, it should not be the goal of the researcher to determine the precise meanings and purposes of the roads and trails. Rather, possible meanings and purposes of the roads and trails should be explored. Throughout this study, research on roads and trails in and around the Chaco core shall be presented along with theories pertaining to landscape archaeology and the analysis of data.

Chapter 2 will explore the theories that will influence this study. Landscape theory will play an important role in understanding the meaning of roads and trails and, thus, will play a large role in this thesis. Phenomenology of the landscape will also be

addressed as it is important to take into consideration not just the road itself, but the surrounding elements that affect the senses of the individuals engaging with the environment. The final theory that will be addressed lends its focus specifically to roads and trails, how they are classified, and associated dynamics. The concluding discussion in this chapter will tie all the theories together and discuss their importance.

Chapter 3 will discuss the case of Chaco Canyon by giving a brief look at the roads and associated features that are common among the roads within the Chacoan core. To further this discussion, a number of different research cases will also be presented. The studies were selected based upon their different approaches to defining the roads within and outside of Chaco Canyon itself, and are divided into roughly defined categories. The first focuses on what are defined as “symbolic roadways,” emphasizing cosmology and temporal connections. The second category looks at roads as a method of integration with the surrounding communities (either direct or symbolic). The third and final category looks at roads as political structures with the larger roads as an expression of elite power or as an avenue of integration via labor investment. After a presentation of the research cases, a final discussion will bring all the cases together.

Chapter 4 will discuss the methods involved in this research, describing the dating used, application of the theories, GIS analysis, and the comparison of this research with Chaco Canyon. Chapter 5 will discuss current research on the Goodman Point region and begin by describing the location, its topography, and the impact by modern agriculture. The archaeological sites will also be introduced individually along with a description of the roads and trails within the area.

Chapter 6 will present the analyses from fieldwork and GIS analysis. Also to be discussed in this chapter will be how the site compares with Chaco Canyon, addressing the similarities and differences. Finally, chapter 7 will present the final discussion of this research, bringing in the theory, research cases from Chaco Canyon, and GIS analysis to provide the context in which the roads and trails in the Goodman Point region can be discussed.

Chapter 2: Theory

The theoretical basis for examining roads and trails in the archaeological record can be divided into two categories. The first concerns the landscape itself; what different categories of landscape can we identify? How can it be understood? What different symbolic elements can the landscape represent? How can we begin to identify these elements? The second approach is more specific, focusing solely on the road and trail features themselves; what purposes do roads serve? How do they differ from trails? What can morphology and associated features tell us about roads and trails? These perspectives provide guidance for identifying the function and symbolic elements of roads and trails.

Landscape Theory

The study of roads and trails is a central component of the landscape paradigm as developed in archaeology since the 1900s. Knapp and Ashmore's (1999: 13-19) influential model presents four interrelated themes that can be articulated through landscapes. These are (1) landscape as memory, (2) landscape as identity, (3) landscape as social order, (4) landscape as transformation.

The landscape of memory is best defined through a phenomenological approach to places, representing the materialization of historical and individual memory. These kinds of locations fall under a variety of categories. They can be constructed organically or purposefully engineered, and can be merely conceptualized or idealized, or any combination of the three.

Landscapes which symbolize identity are created through rituals or through a group mentality. This interpretive approach lends itself towards an entire group's

understanding of areas. Similar to this is the third interpretive approach of social order, which views landscapes as a fundamental role in ordering social actions. This interpretive theme would be as much symbolic as it is functional and would fall in line with political or economic purposes of the landscape. The final theme, transformation, depicts roadways as transformative to society. In other words, features within the landscape such as roads or trails were used then reused, often reconstructed by different groups throughout time.

The approach described by Knapp and Ashmore is not too different from the phenomenology of landscape as expressed by Christopher Tilley, albeit in a more generalized form. Phenomenology “involves the understanding and description of things (i.e. landscapes) as they are experienced by a subject,” (Tilley 1994:12). The phenomenological approach attempts to access these meanings or descriptions of experience by “reading” the landscape and connecting their own experiences with those of the individuals of the past (Hodder & Hutson 2003).

The method involved in making these observations is often done by walking the landscape, recording what can be seen at different points along the walk, and using one’s own experience to define the meaning. Tilley (1994: 170-201) employed this method when researching the Dorset Cursus, a Neolithic monument in southwestern England. He walked along the landscape describing features, monuments, impressions, to read the landscape and understand the impressions that the prehistoric peoples may have once had. Naturally, this approach can be somewhat questionable in how accurately one can define the meaning or experiences that the prehistoric peoples would have had when engaging within the landscape. These limitations, however, can be somewhat avoided

with the consideration of ethnographic sources and acknowledgement that these limitations exist.

Matthew Johnson (2012) explores the topic of phenomenology and the landscape further by examining its history and its past limitations. He argues that the idea of material culture being like a “text that could be read” is a limitation because the materiality of the past landscape and material culture was lost in such a textual approach (Johnson 2012: 270, Hodder and Hudson 2003, Moore 1987, Tilley 1990). Despite this, interest in landscape and attempts to understand it still indicates the value of a phenomenological approach. Johnson argues that phenomenological thought stresses several broad themes in anthropological and interdisciplinary scholarship (Johnson 2012, 273). In particular, social practices are of main interest and importance when attempting to understand experiences that people have had in the past landscapes. As landscapes are best understood in terms of identity formation, understanding the landscape in terms of social practices relies on observing the form, appearance, and location of prehistoric structures (Johnson 2012: 273). This understanding is important as phenomenology strives to explain the structures of human experience and consciousness, and in terms of the landscape, this is best done through understanding what they experience.

Ingold (1993) develops a different perspective on landscape theory by introducing the idea of temporality. “For both the archaeologist and the native dweller, the landscape tells – or rather is – a story. It enfolds the lives and times of predecessors who, over the generations, have moved around in it and played their part in its formation” (Ingold 1993: 152). What Ingold argues for is what he describes as “the temporality of the taskscape.” Ingold describes this term as the “entire ensemble of tasks, in their mutual interlocking.”

Just as the landscape is an array of related features...the taskscape is an array of related activities...In short, the taskscape is to labour what the landscape is to land” (Ingold 1993: 158). Actors go about their business in the social environment by watching, listening, and even touching. “Through movement and feeling stemming from people’s mutually attentive engagement, in shared contexts of practical activity, lies the very foundation of sociality” (Ingold 1992: 160).

To make the taskscape better understood in the form of the cultural landscape, Ingold separates these two by senses. The landscape in which we interact with society is a congealed form of the taskscape, that which we observe (buildings, grass, geological features) whereas the taskscape is what we hear (cars driving by, people talking and interacting, birds chirping) (Ingold 1993: 162). This explanation helps us better understand what Ingold means when he describes the taskscape as the social environment from which we carry on our social lives. This explanation, however, is overly simplified, for the taskscape should not only be restricted to the sounds of the environment or the people who inhabit it. Ingold acknowledges this and clarifies that there is more to the landscape than just what one can see. The landscape embodies more than just the visual aspect but also memory that that becomes instilled within the human environment (Ingold 1992: 170). To elucidate these ideas, he uses quotes from Merleau-Ponty (1962: 24) as describing the landscape as not so much the object as it is the “homeland of our thoughts.” A similar perspective has been presented by Basso (1984: 49):

“an ecology that is fully cultural is one that would attend as much to the semiotic as to the material dimensions of people’s relations with their surroundings, by

bringing into focus “the layers of significance with which human beings blanket the environment.”

Landscapes of Movement

While not too distant from landscape theory, the landscape of movement is a subcategory that specifically pertains to examination of roads and trails within the cultural landscape (Snead et al. 2009). Such research by Charles Trombold (1991) and Timothy Earle (1991) would fit within this category as they both seek to explain the differences between formal and informal paths based upon morphological differences. Trombold also explored an evolutionary perspective in which roads in Chiefdom level societies contrasted sharply with roads within State level societies. This was also researched by Earle who showed that roads are generally only found within Chiefdom and State-level societies, whereas trails are found through all levels (Earle 1991: 12-13).

Ross Hassig (1991) focused his research to analyzing roads and trails as they apply to the cultures which engineered them. His analysis can help us differentiate between function and symbolism of roadways by examining not only the amount of work that would have been involved in creating and maintaining them but also the associated features. Thus, road construction reflects the traffic it was built to support and by identifying what they connect will further our analysis of their intended use. Roadways themselves are believed to be constructed to stabilize either an entire region or a localized location. Furthermore, their construction and maintenance requires a certain degree of organization. This would suggest that the elites within the society would have had strong organizational power and influence. Additionally, this organization can also be viewed as

an important part of integration to the community through labor investment (Hassig 1991:19).

Hassig also suggested that evidence for the function of roads is in the details of their construction. An elaborately engineered and well maintained road is likely to be defined politically rather than for economic exchange as they are simply a financial burden. The reasoning is that narrow roads require less maintenance and thus would be more suitable for economic exchange. Trade does not require an elaborately built and maintained road. Similarly, for political expression, a narrow and less maintained road is not very impressive. While this may seem to be a logical way of explaining the function of roads based upon morphology, it also requires the presumption that all construction was done within this frame of thought.

Because Hassig's approach requires a certain presumption that may not be true, it should be considered more as a foundation for applications of landscape theory to the study of roads. While morphology can help us identify possible explanations of function, their destinations are a major piece of information in exploring function. Justine Shaw (2012), for example, takes road structure into consideration in seeking to define the function of the Mayan sacbeob. One of her first observations is the unusual width of these roads when compared to the traditional footpaths. Her second observation was that many religious structures are often located at the terminus where sacbeob meet.

Shaw discusses possible functions for these roads, including movement, water management (with the assumption that they could have served as a way to collect, channel or retain water), political, or militaristic explanations (Shaw 2012: 131-134).

Using Hassig's (1991) approach in determining function of roadways, Shaw examined the roads and their morphology. Shaw determined that it does not appear to make any effort to link to any intermediate locales between two points and found that few functions truly need a road of this size. The presence of associated temples leads the author to believe that the most plausible function of the sacbeob may have been religious. She makes a note, however, that while this is likely its intended function that it is entirely possible that the sacbeob could have also served more casual, day-to-day purposes (Shaw 2012: 141).

Discussion

While the theories discussed here each take their own approach to understanding the landscape of roads and trails they are also complementary. Hassig (1991) proposed a fairly practical approach to understanding the landscapes of movement through examining how the roads were constructed in addition to their destinations. This model was subsequently applied by Shaw (2012) who determined that the likely function of the sacbeob can be reflected by the associated structures. While the roads would not involve the same activities that were taking place at the nearby religious structures, the walk to and from those structures would be a part of the overall activities.

The more symbolic approaches to understanding the landscape do not disregard practical approaches to understanding the constructed landscape. Instead, they purpose a deeper meaning to what is an otherwise more external examination of the landscape. Knapp and Ashmore (1999) grappled with discerning the differences in the meanings of the landscapes. While this approach may appear to be contradictory to what Hassig

(1991) was looking to do in examining the structures, Knapp and Ashmore (1999) took a different approach in examining the deeper meanings expressed in these landscapes. The categories and discussions that Knapp and Ashmore provide in their research set the stage for looking at the landscape (and as Ingold (1993) would put it, taskscape) beyond the basic categories of religious or political.

While the setting of the constructed landscape may be described as political or religious, we can get a more detailed definition that would describe the architecture as one of meaning. In Knapp and Ashmore's research (1999), this would put the landscape in a setting which suggests that it was either constructed as, or through interaction, became something that materialized the memories of individuals.

This approach draws parallels with the phenomenological approaches followed up by Tilley (1994), Johnson (2012), and Ingold (1992) which looked more directly at agency, individual interaction, and observation in the landscape. As phenomenology seeks to understand how individuals understand or describe things (landscape), these paralleling theories seek to make sense of the surrounding architecture, what the actors observe, and the placement of these structures or altered landscapes. It is taking into consideration all these features, both natural and constructed, that help us understand how the original inhabitants would have interacted with their landscape, how they materialized their memory or ordered their social activities. Ingold (1992), in seeking to define the different type of landscapes or taskscapes, makes this theoretical approach easier to apply.

These theories are very complimentary because we cannot understand the landscape by only examining the associated structures, for that would be only an external (or explicit) understanding. While understanding this explicit function may help us determine its purpose, it may not always inform us of the deeper (or implicit) meanings. It is this understanding that relies on the symbolic theoretical approaches (Tilley 1994, Johnson 2012, Ingold 1992) that picks up where the practical ones (Hassig 1992, Kantner 1997) leave off.

In the context of Chacoan pathways this would lead us to wanting a broader model than simply looking for practical or symbolic interpretations to pathways. With Knapp and Ashmore's (1999) theory along with Hassig's (1992) model, we can look at road construction as a viable approach to interpreting pathways. A narrow trail connecting to an important natural resource would have much to say about the taskscape of the region. Similarly, a widely constructed path uniting multiple habitation sites to a community center would have a much different story regarding the taskscape of the region. The following chapter will discuss more specific research done on Chacoan roadways to help apply the theories explored.

Chapter 3: Chaco Canyon

Due to the complexity of Chaco Canyon, this site has served as a valuable research model on prehistoric roads in the New World. These “Chaco roads” provide a context for not only understanding the landscape of movement, but also for better understanding the cultures that used and constructed them. Chaco Canyon is a large Pueblo II (A.D. 900-1150) site that flourished from A.D. 900 until approximately A.D. 1150, when the population eventually abandoned the site (Powers *et al* 1983). The site is made up of 12 Great Houses (or large multi-room community centers) scattered throughout the canyon (Lekson 2006: 11). The largest Great House, Pueblo Bonito, is located in the center of the Chacoan core and consists of over 600 rooms (Van Dyke 2008: 119f).

In addition to these massive Great Houses, a large-scale road system appears to connect many of these sites together. Two of the largest roads are the Great North Road and the South Road. The Great North Road extends nearly true-north for approximately 50 kilometers and the South Road extends 51 kilometers (Van Dyke 2008: 145). These two roads lead out of Chaco Canyon a great distance suggesting connectivity with outlying communities. On average, these roads measure about 9 meters wide, but can range from 3 to 12 meters (Van Dyke 2008: 145).

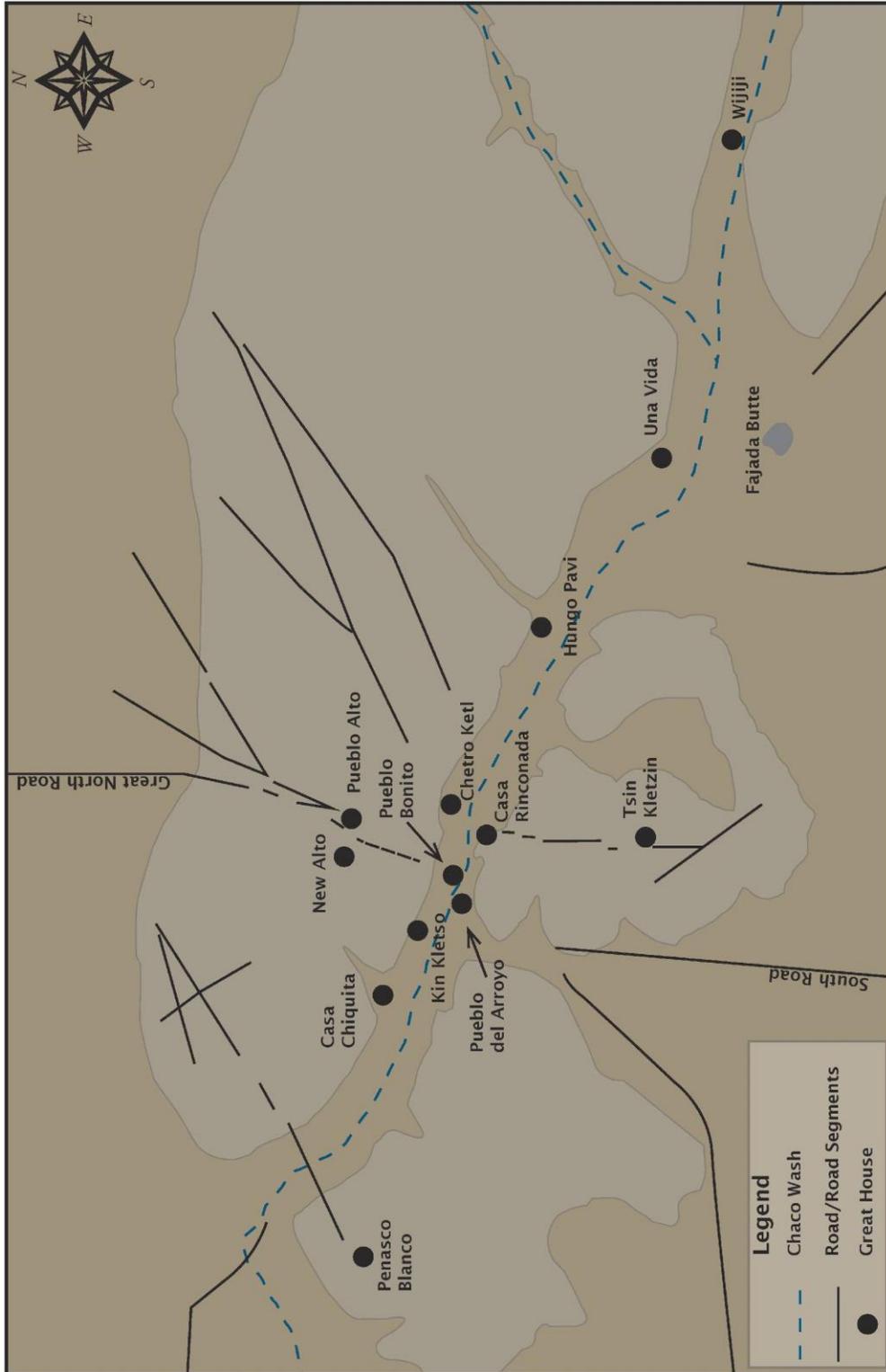


Figure 3.1: Core of Chaco Canyon showing the layout of roads and Great Houses.

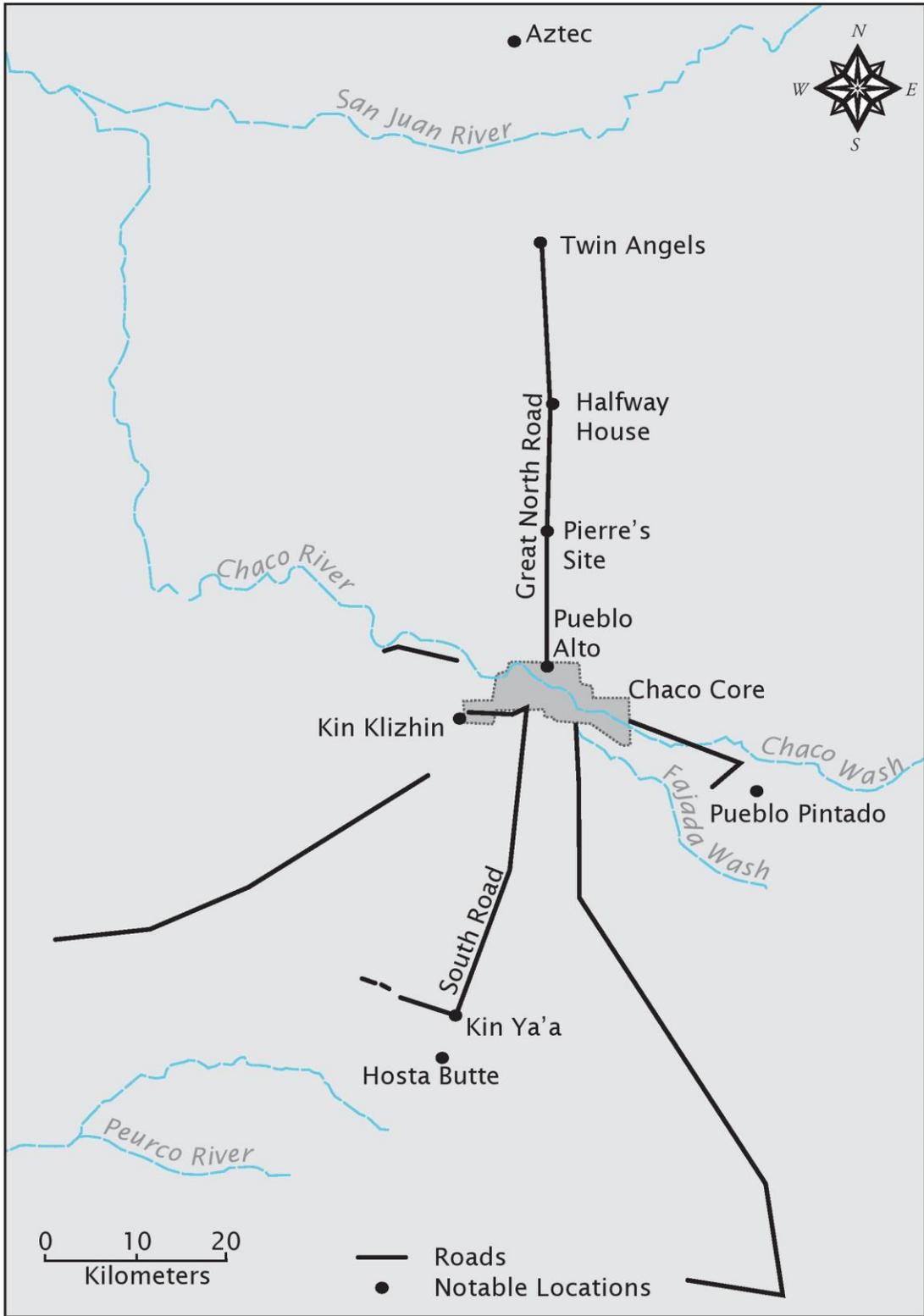


Figure 3.2: Major roads in and around the Chaco Core.

Because of the complexity of the Chacoan landscape, many arguments have been put forth seeking to explain not only the function of the road system, but also to better explain what Chaco Canyon was. One popular theory views these roads as performing economic functions, with Chaco Canyon serving as a center for redistributing goods to outside communities (Winter 1980, Powers 1984, Tainter and Plog 1994, Wilcox 1993). A second theory adopts religious perspectives, with the roads as symbolic representations of Chacoan cosmology, aligning with cardinal directions and emphasizing connection to prominent geological features (Sofaer 1997, Marshall 1992, Van Dyke 2008). Others have suggested an integrative explanation where the roads served to integrate local populations over small areas to community centers (Roney 1992, Vivan 1997, Stein and Lekson 1992).

More complex theories such as that presented by Renfrew (2001) involve a critique of three different models on Chaco Canyon. The first model adopts similar ideas to those of the popular economic theory, suggesting that Chaco Canyon served as a secondary trader, in which Chaco acted as a beneficiary of a long distance trading system. This model was also recognized by Judge (1989, 1991) in which he relates the importance of turquoise for Mexican communities and the large amount of turquoise found in Chaco Canyon. The second model sees Chaco as a power base of an elite group which exacts tribute from centers lower in the hierarchy. This would suggest that the roads supported movement between lower ranking community centers for the purpose of collecting tributes.

The final model, on which Renfrew focuses most of his attention, views Chaco as a location of ritual economy and a Location of High Devotional Expression (LHDE). In

this model “the great houses and great kivas themselves are actuated by a powerful and coherent belief system responsible also for the ‘roads’ or ceremonial promenades,” (Renfrew 2001, 15). The key definition is that Chaco Canyon served as a center where pilgrims would exchange good or services for the fulfillment of participating in rituals/ceremonies at the Great Houses (Renfrew 2001, 22).

One aspect of the Chaco roads that makes them relevant to theories of these types is the presence of diverse associated features. While these include Great Houses and Great Kivas, there is also smaller road-related architecture. *Herraduras* are one type of feature described as “low (up to 1 m in height) masonry enclosures consistently are located on elevated breaks in topography that afford extended visibility along the road route” (Vivian 1997a: 21). They often mark locations in the road where a subtle bearing change (Nials et al. 1987: 13). *Zambullidas* are elaborately constructed herraduras or a simple large houses typically located in “elevated situations of high visibility” that articulate with roadways (Nials et al. 1987: 14). The site called an *Avanzadas* is thought to be a variation of the herraduras, are classified as a “squared rectangular building which includes one to four rooms..., situated on an elevated low butte...above the road alignment (Nials et al. 1987: 14).

In addition to these structures, cairns, or circular stacks of stones, are quite abundant within the Chacoan core and measure up to 1 meter in height (Nials 1983: 6-23). Hayes (1981) reported that there were at least 20 cairns that were associated with roads or stairs. While it is thought that these are prehistoric features, Hayes (1981) suggests that these cairns are likely the result of historic Navajo activity rather than

prehistoric Pueblos. Bonito style cairns associated with roads, described as generally larger than 1 meter in diameter, are reportedly not very common (Nials 1983: 6-23).

One aspect of the roads themselves that has attracted interest is that many do not appear to physically connect two locations. Roads will start at a great house only to end abruptly. The Great North road for example seems to end abruptly at the rim of Kutz Canyon, although some researchers have suggested that the road may extend along the canyon bottom far as the Salmon and Aztec ruins (Lekson 1999, Stein and McKenna 1988). There are other examples of roads within Chaco Canyon road network that simply end without connecting to another node. Vivian (1997b), however, argues that they are symbolic and don't necessarily need to physically connect to a location as long their meaning of sustained ties are established.

These diverse aspects of the structure of roads in Chaco Canyon suggest that complexity involved in interpreting their role within the Chacoan system as a whole. To discuss the road network in greater detail, a number of case-studies shall be presented in the following section to provide a basis for further discussions. These examples are split into three categories: symbolic roads, social roads, and political roads.

Social Roads

John Kantner's 1997 article tests possible explanations for Chacoan road function using cost-path analysis through GIS. He mapped numerous roads in Chaco Canyon and ran a cost-path analysis to generate roads that were determined to be least effort between two locations that were determined as possible start and end points for the roads. For example, he used Pueblo Bonito as point A and the Chuska Mountains to the west as

point B as a test case regarding economic function, since the Chuskas were probably the source of raw materials used in the Chaco system. A road was generated and was compared to the existing roads and road segments (Kantner 1997: 55).

In the overall model, few Chacoan roads correlated with a “least cost” route, with the one exception of portions of a road going south. An economic function thus seemed improbable. This is, of course, if one were to assume that if the Puebloans intended to construct roads for this purpose, they would have done so with the intent that they were to be constructed in the most travel-efficient way (or that they even knew of the most cost-efficient route). What Kantner (1997: 61) eventually concluded that GIS mapping suggests that local integrative and religious explanations appear to be the most likely explanations.

Vivian (1997b) proposed that roads are tangible symbols of intangible ideas and serve to facilitate social cohesion. He argued that because several of the roads in Chaco Canyon are only segmented, rarely extending full length, they may have merely served to symbolize social integration. He joins Kantner in arguing that connectivity was the essential purpose of these links.

On the one hand, this symbolic interpretation of roads can be viewed politically in that the construction of these roads served to integrate the inhabitants. On the other hand, roadways that connect smaller hamlets to the large great houses, and smaller hamlets to other hamlets, could certainly have symbolized social integration. Ceremonies, while cosmological and/or political in meaning, would also have served to integrate the numerous individuals living in the community, and the roads would have served to bring

people together for ceremonies. For example, nearly every road originated at a specific great house which has been believed to be the center of public rituals as well as the location of kivas (circular ceremonial structures) where more private ceremonies were conducted. It would seem very feasible that participants of feasts and other ceremonies held by elites at these great houses would walk these roads as they went to and from ceremonies. While the routes may be fairly insignificant in the actual performance of rituals, they may still have been instilled with a sense of meaning to those traversing the paths to and from the ceremonies, less of an actual ritual and more of a ritualistic habit. This perspective is similar to that discussed under the theme of identity as offered by Knapp and Ashmore (1999).

James Snead's (2012) research follows Vivian (1997b) and addresses the issues of function and symbolism. His research looks not at how roads are used, but what they represent. While we tend to view roads as a form of mobilization, he makes a point to mention that these are best explained as exponents of their construction. Thus, we must attempt to understand not what they were, but what they mean. With this in mind we can view them as not only utilities to assist in travel but also as landmarks, as tangible evidence of the intangible idea of unity established through their connecting nodes. This is not only to be experienced by those who traverse these paths, but also to those who do not.

This idea is further expanded by Lekson (2006: 33) who states that most roads (at least in Chaco Canyon itself) were monuments, and not necessarily corridors of travel. At least among the Puebloan communities, roads served as symbols and in some instances used for ceremonies. This can be tied to what Knapp and Ashmore (1999: 13) define as a

landscape of memory, where group or individual experiences bring meaning to the landscape.

To borrow an analogy used by Stein and Lekson (1992: 16-17) Chacoan roadways stand as a symbolic umbilical, representing connectivity and sustained ties with their destination. The idea that roads could serve as a symbol of unity or connectivity is useful in understanding road segments and those that simply end abruptly, with no sign of it continuing anywhere else. It is possible that roads did not need to be fully constructed to their destination; perhaps as long as it indicated the proper direction it was enough that it symbolized the connection.

Political Roads

The discussion of roads being built for political purposes reflects multiple facets of functionality. Research by Roney (1992:123-131) suggests that roads were not built to facilitate movement nor were they built for economic purposes; rather, they were constructed to compete with other elites for “control” of people. Elaborate constructions were organized by the ruling elites and the scale of the architecture was directly correlated to how much political power/organization elites had. One elite would have constructed a wide road extending several kilometers in length, provoking a response among competing elites, who tried to construct even more impressive roads. This theory works if we are to accept that each great house was not a part of one single organization, but that each great house was ruled by an elite competing for followers. One such theory was proposed by Katherine Spielmann (1993), proposing that Chaco Canyon was a “clustered confederacy.”

A second facet in this discussion is that not only did the constructed roadways play a role in the competition for followers, but that the construction of the roads and related architecture promoted social integration (Roney 1992:130). One might see this as a feeling of obligation towards the community after putting much effort towards the infrastructure. “In etic terms, labor investment creates integration” and elaborate roadways would display this idea (Roney 1992:130).

This particular interpretation considers both the necessary functions of landscape along with the symbolic meaning that accompanies any political structure. Additionally, this case study would almost seem to suggest that the political function creates the symbolic element of shared identity through labor investment. Should this then suggest that an attempt to interpret a function is best approached through a symbolic theory? I would argue no for the reason that only through determining the function can we elucidate the symbolic component. Vice versa, such that determining a symbolic element should also assist us in determining its more basic function.

Symbolic Roads

Research by Anna Sofaer et al. (1989) focused on cosmological meanings of roadways in and around Chaco Canyon. They argued that some, if not all, of the Chacoan roads were symbolic or cosmological expressions of their beliefs. The most prominent of these roads is the Great North Road. Based upon its length (51 kilometers), wide construction (6 meters on average), and orientation to true north, they suggest that it was intended to connect the greater region to the ceremonial center or “middle place” as

described in Puebloan cosmologies, which they argue was Pueblo Bonito (Sofaer et al. 1989: 386).

In agreement with Anna Sofaer et al (1989), Marshall (1992) took the cosmological analysis a step further, focusing on the orientation of roadways with the regional ceremonial center and using additional ethnographic sources. He states that the “cosmological function for the Chacoan roads is supported by the use of constructed roadways as sacred pilgrimage avenues by historic and modern puebloan peoples,” (Marshall: 1992: 10). So while the cosmological significance of the Great North Road is expressed through its direction, other roads do so as pilgrimage paths to locations of significance (i.e. Pueblo Bonito, Hosta Butte, or great kivas). To support this interpretation, Marshall argues that the roadside features called herraduras and related roadside features served as shrines which pilgrims would visit on their travels.

Fowler and Stein (1992) focused their research on roadways outside of the Chaco core. In particular for this case study they examine a road connecting two non-contemporaneous sites, Kin Hocho’I (a Chacoan era great house) and Ats’ee Nitsaa (a post-Chacoan era great house) in a region Southwest of Chaco Canyon. In addition to the temporal anomaly, the Chaco era structures were abandoned but left untouched, such that none of the materials were re-used in the construction of the later post-Chacoan era great house. With the understanding of Chaco Canyon as both a ritualistic landscape and a victim of a sudden collapse and dispersal from this ritualistic landscape, Fowler and Stein (1992:101-122) proposed that the road between the site represented a connection to the past or, as they term it, a road through time. Thus, one might assume that they either feared or revered the symbolism that the Chacoan era structure would have represented.

Similarly, the Great North Road is also argued to be a road through time, connecting later, northern sites (perhaps even Aztec and Salmon) to Chaco Canyon (Fowler and Stein 1992: 119). Work by Ruth Van Dyke (2008: 234) has also explored this theory of “time-bridges,” proposing that “Post-Chacoan people may have been attempting to consolidate community identity or create their own brand of legitimacy through constructing references to a shared Chacoan Past.”

Additional research by Ruth Van Dyke (2008) adopts a type of phenomenological approach to her research on Chaco Canyon in which she focuses on three perceptions, “visibility, movement, and memory” (Van Dyke 2008: 8). Accordingly, she walked along six major formal approaches leading into Chaco Canyon: Ah-Shi-Sle-Pah Road, West Chaco River, South Road, Fajada Gap, and East Chaco Canyon (Van Dyke 2008, 152). She makes an important note, however, she is under “no illusion that these phenomenological experiments will allow her to replicate the Chacoan spatial experience” and acknowledges that any interactions with the landscape are culturally conditioned (Van Dyke 2008, 152). Instead of relying entirely on her own experiences to form explanations, Van Dyke thus used existing ethnography as a supplement.

One of the key emphases in Van Dyke’s research the visual experience that pilgrims may have experienced when entering or leaving Chaco Canyon along these formal approaches. She found that in three of the instances that the great houses associated with the roads would have heightened the experience for travelers. In addition to the discussion on visual experiences that pilgrims may have experienced entering Chaco Canyon through the formal approaches, she discusses the dualism that the North and South roads represent, defining Chaco Canyon as a center place (Van Dyke 2008,

164). Van Dyke also makes a note that while the South road is not true south; its symbolic purpose is still served and suggests that the importance of symbolically connecting to Hosta Butte may have been more important than true south (Van Dyke 2008, 150).

Discussion

Eight different interpretations of roadways at Chaco Canyon have been discussed, each specific to a type of approach that considers them to serve as a symbolic element relating to cosmology, social elements relating to integration, or political purposes reflecting local competition.

One recurring theme in these different case studies is the symbolic element that many argue are present in these roads. Even research which sought an economic interpretation for the roads (Powers 1982, 1984, Wilcox 1993), classifying them as strictly practical pathways, can argue that the symbolic element of connectivity exists within outlying communities. With this said, however, interpretations of roadways need not be pigeon-holed into one specific category; one road can serve multiple functions. For instance, Kantner (1997) analyzed the roads for economic, cosmological, and integrative functions, concluding that many of the roads fit these different functions.

Each of the case studies presented adopts a different methodology. Kantner (1997) utilized GIS to facilitate the discussion of road function. Van Dyke (2008) took a phenomenological approach, walking the routes themselves. To facilitate her discussion, Van Dyke (2008) utilized existing ethnography to supplement her own experiences. Her interpretations of these roads had similarities with those of Anna Sofaer et al. (1989) and

Marshall (1992), both of whom found cosmological significance in the roadways, particular to the pathways which ran in cardinal directions. These case studies, along with Renfrew (2001), all perceive Chaco Canyon as a ceremonial center, a center point from which all the roads emanated. However, Renfrew also suggested the existence of a “sacred economy” associated with the roads. Not only did locals and pilgrims enter the ceremonial center for religious purposes, but in doing so they brought in goods.

Fowler and Stein (1992) proposed in their study a related cosmological definition pertaining to a stretch of road connecting Kin Hocho’I with Ats’ee Nitsaa drawing from the cosmological studies that define Chaco Canyon as a ritualistic landscape. Thus, roadways within this understanding are more of a ritualistic structure and not necessarily used just for traveling.

Snead (2012), Vivian (1997b), and Roney (1991) all sought a more integrative explanation for the Chaco Canyon pathways, following that pathways are merely a symbol of unity between two points. However, Roney (1991) proposed that roads, along with other constructed community structures, were not just symbolic ties, but physical ones as well. The community activities on these paths (such as traveling) were not the only route through which integration was achieved, but facilitated through the effort of its construction and maintenance.

What we see in the selected case studies is more than just a discussion on the roads, but a discussion of the nature of the “Chaco Phenomenon” itself. Several of the case studies that seek to define the roadways as cosmological define the Chacoan landscape as largely ritualistic, where the larger site of Chaco Canyon was, in fact, a

center place from where all the roads emanated. Such an interpretation lends itself to an understanding that most architecture was involved in ceremonies and other rituals. In this sense, Great Houses were not houses at all, but were ceremonial structures. Similarly, the roadways were not designed for travel, but for ritualistic symbols. That is to say, they were constructed for ceremonial purposes.

In a slight contrast, the secondary understanding of the Chacoan landscape was that it represented a more social or integrated community. This understanding does not discount a ritualistic understanding of the Chacoan region, but it perceives the significance of architecture as more social. In this sense, while the Chacoan culture is still observed as largely influential to the surrounding populations, it does not stand as a center place. The Great Houses, while still not seen as habitation sites, are there to integrate individuals as community centers. Similarly, the pathways are there to integrate the multiple sites within Chaco Canyon. Since this sense does not entirely discount the cosmological significances of some of the structures, this integration can occur through ceremonies held at Great Kivas or Great Houses as well as the more social purposes that the roads allow for through unifying the sites along its route. Thus, perhaps we can best understand features in the Chacoan landscape, and roads in particular, as having both social and ritualistic significance.

Chapter 4: Methodology

This chapter outlines the methods that were used in the research program. The first section will explain the research area and define the types of pathways under study. A brief synopsis of the method of dating follows to assist in understanding the terms used for describing different periods within the southwest. The fourth section will outline cost-path analysis as it is used in this study. The last two sections will describe how ground verification will be performed and how Chaco Canyon will factor into this study.

Research Area

The study area is located within southwest Colorado, now referred to as the central Mesa Verde region (Kuckelman 2007: 1). A large number of Pueblo III settlements contemporary with Chaco Canyon have been identified in this vicinity, including Sand Canyon, Castle Rock, Shields Pueblo, and Goodman Point Pueblo. The particular area of interest that is associated with the last two pueblos, Goodman Point Pueblo and Shields Pueblo, is in a region where two documented Chacoan roads have been identified.

Definitions

To apply the theories presented and to analyze the prehistoric landscape, the data under consideration must be defined. The two typical types of pathways that one will encounter in the prehistoric landscape are roads and trails. To get a clearer idea of the difference these features, Charles Trombold (1991: 3) and Timothy Earle (1991: 11) define a basic dichotomy between formal and informal paths (or roads and trails). This difference is that formal routes show purposeful planning and construction, such as

uniform morphology and a consistent direction. Earle (1991: 10-11) defines the informal paths (in this study, trails) as created through repeated travel across the landscape, occasionally having alternate routes, and may have served immediate needs.

While roads, like those in Chaco Canyon, are clearly constructed and engineered, trails do not show similar form (Vivian 1997a; Nials 1983). Roads tend to show a clear trajectory and planning. Trails are often thought to be created organically or, in other words, be created through repeated travel. This is best described as an evolved landscape as described by both Knapp and Ashmore (1999) and by the original UNESCO classification of landscapes (Cleere 1995: 65-6).

Understanding the difference between roads and trails will allow us to better examine the significances of these pathways in their proper light, such that the importance of a road may differ significantly from the trail. However, while this will help us differ between two types of pathways, the question of function still remains for either of these paths. To assist in determining this we can look at Hassig's (1991) approach which looks at associated architecture to help define the function of roads/trails. Roney (1992) further expands on this to propose that while associated architecture help define function that the pathways facilitate integration but not through use, but through construction and maintenance.

Dating

The dating used in this research follows the classifications of eight different stages of the ancient Puebloans as identified through architecture, art, pottery, and cultural remains. This consensus was reached in 1927 at an archaeological conference

Pecos Classification. A. V. Kidder, 1927		
Original Period	Date	Traits
Pueblo V (Historic)	c. A.D. 1600 - present	A. D. 1600 to present
Pueblo IV (Proto-Historic)	c. A.D. 1300 - 1600	Widespread abandonment, decline in artistic elaboration and craft specialization
Pueblo III (Great Pueblo/Chacoan-era)	c. A.D. 1150 - 1300	Very large communities, artistic elaboration and craft specialization
Pueblo II	c. A.D. 900 - 1150	Small villages, pottery corrugated over entire surface
Pueblo I (Proto-Pueblo)	c. A.D. 750 - 900	Above ground structures of contiguous, rectangular rooms. Pottery with unobliterated coils or bands at neck. Cranial deformation
Basketmaker III (Post-Basketmaker)	c. A.D. 600 - 750	Pithouses or slab houses, plain pottery, no cranial deformation
Basketmaker II	c. B.C 100 - A.D. 600	No Pottery, but agriculture and atlatl present
Basketmaker I (Early Basketmaker)	c. B.C. 7000 - 100	Pre-agriculture, no longer in use, considered the Archaic

Figure 4.1: Eight stages of the Pecos Classification.

held in Pecos, New Mexico, and organized by Alfred V. Kidder. The dates in the following dating are only approximate and are there to provide a rough estimate of each of the labeled stages. Due to the ever-changing archaeological record and variations among different regions of the four-corners, these dates are subject to change and may not be entirely consistent with all research within the Southwest. Additionally, as Chacoan-era culture is of interest in this research, Pueblo III (Great Pueblo) period will often be referred to as the Chacoan-era rather than the Great Pueblo period. Furthermore, as this study is focused on the Mesa Verde region, it should be noted that Chacoan influence came to the region in c. A.D. 1080-1140.

GIS Analysis

While Hassig (1991) and Roney (1992) help us in defining function, a cost-path analysis can help in supporting observations regarding the architectures to which they are associated. Cost-path analysis, similar to network analysis, is a tool that measures the effort, or cost of, traveling through each cell from a source to a destination, thereby giving each potential path a unique value that defines the lowest total accumulated effort required to complete the journey. The resulting value provides a route that is calculated as a “least-cost” path between the two points (Chang 2013: 366, Bolstad 2008: 404-409). While this tool is useful for taking into consideration numerous variables for construction purposes of modern utilities and roads, cost-path analysis is also valuable for researching the alignment and feasibility of travel for pathways constructed by prehistoric cultures.

This operation will tell us whether or not the path is built directly to the hypothesized structure or built with a least-cost in mind. Cost-path analysis may also help

us determine if there are any differences in alignment between roads and trails. A secondary benefit of performing this analysis is that it will involve plotting of both pathways and sites within the area, allowing us to view, spatially, how close structures are with these pathways at not just their start/end points, but also in between. This will also allow us to identify any clustering of sites that may rest along these paths, indicating possible favoring of locations along these perceived corridors of travel.

Ground Verification

Because this study is focusing on the roads and trails in the Goodman Point Region, ground verification is beneficial to understanding the specific features that are the subject of interest. Ground verification will involve obtaining measurements of width and depth, factors that are important when discussing the nature of roads and trails. Additionally, it will be important to observe what additional pathways may exist within the region. Finally, as road markers have been recorded along roads within Chaco Canyon, additional road related architecture will also be of interest when performing ground verification.

The Chacoan Example

Because it is believed that the roads and trails observed within the Goodman Point Region were influenced by the Chacoan culture, a comparison will be made against the pathways of Chaco Canyon. Road-related architecture, trajectory, and morphology will be of interest when comparing the pathways of both cultures. The result from this comparison will show us how similar or different the pathways within Southwest Colorado resemble the large road network in Chaco Canyon. A close resemblance would

suggest that Chaco Canyon had a large cultural impact on outlying communities within the Four-Corners region of North America. In contrast, a minimal resemblance would suggest that only portions of Chacoan culture were passed down to outlying communities.

Chapter 5: Current Research in the Goodman Point Region

The location of the research area for this study is located in a rural farming region in Southwestern Colorado, part of the Four Corners region of the United States. It is near the city of Cortez, in and around one parcel of Hovenweep National Monument. The specific area of interest is identified as the Goodman Point Region (named after the Goodman Point Pueblo at the center of the study area) and covers an approximate 3 kilometer radius centering on the one parcel of the Hovenweep National Monument. This region is within the Central Mesa Verde archaeological region, which contains a number of Puebloan archaeological sites.

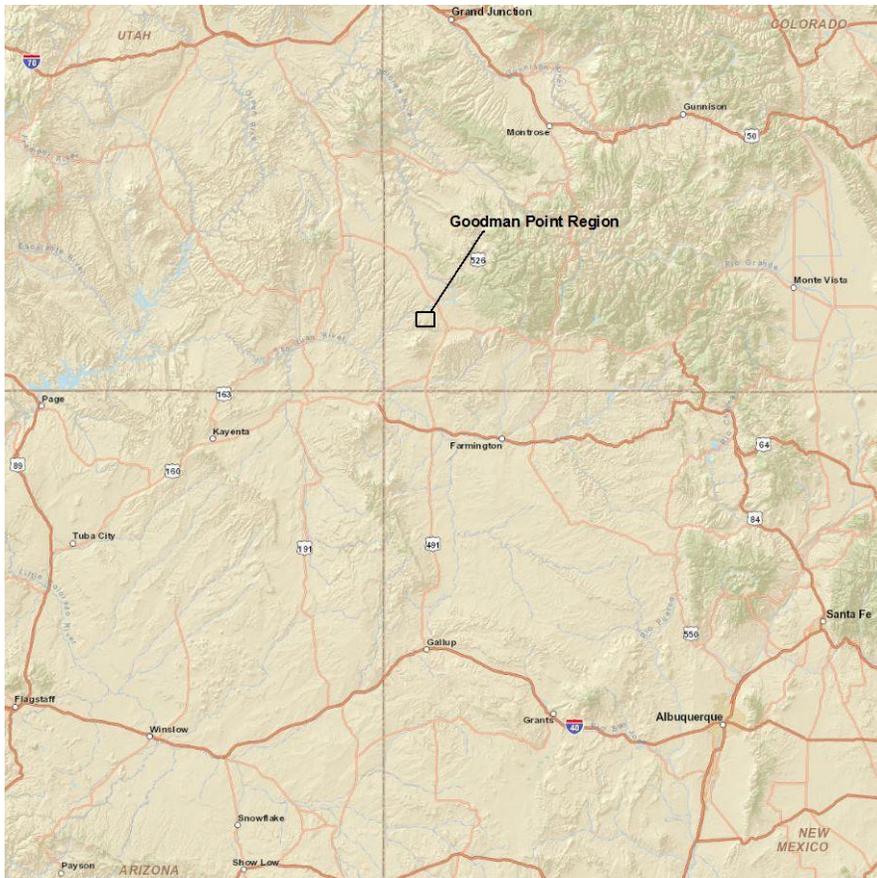


Figure 5.1: Location of the Goodman Point Region in the Four Corners area.

The topography is best described as *rolling hills*, occasionally divided by minor canyons and drainages. Elevation ranges from 2003 meters (6600') on the canyon slope to 2054 meters (6740') on stabilized eolian ridges above the west rim (Hovezak 2004: 8). The general environment in and around Goodman Point Pueblo is transitional between the Great Sage Plain of Southeastern Utah and the Blanding Basin of Southwestern Colorado (Hovezak 2004: 8). The Great Sage Plain itself is an area of sage-covered dunes. Goodman Canyon, immediately east of Goodman Point Pueblo, runs north/south and is one of numerous drainages that make up the McElmo Canyon and is a tributary to the San Juan River. Most of the vegetation in and around Goodman Canyon consists of pinyon pine and juniper trees. Additional vegetation includes serviceberry, mountain mahogany, cliffrose, antelope bitterbrush, fendler, and rabbit brush are common within the region. Outside of the area preserved by Hovenweep National Monument and the land owned by Colorado Mountain College, much of the area has been cultivated and farmed by private owners.

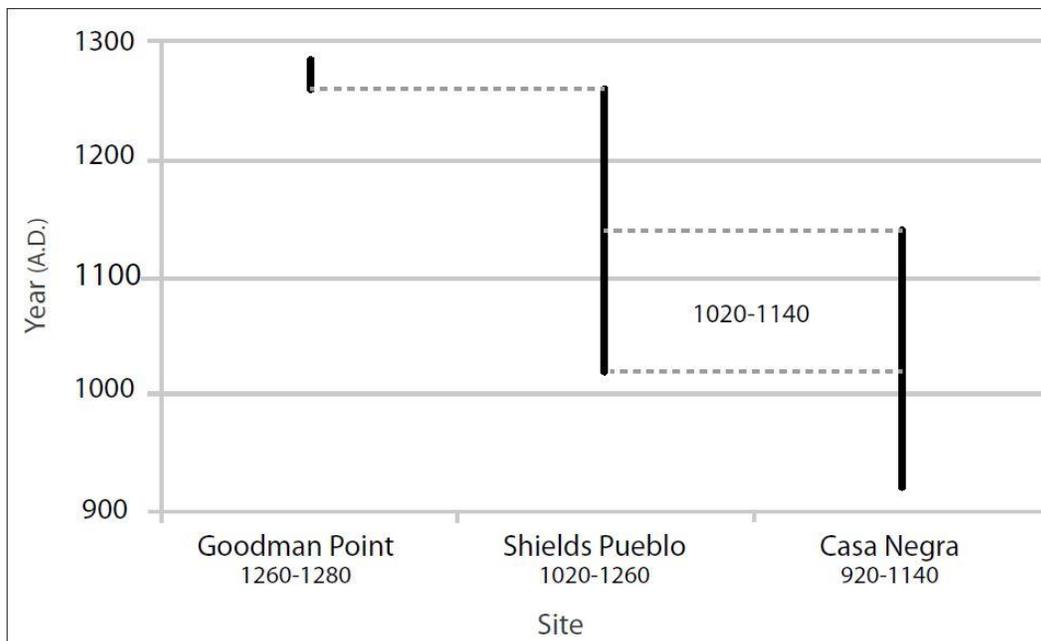


Figure 5.2: Table showing relationship between occupation dates of sites.

The archaeological record of the Goodman Point region has been heavily impacted by modern farming techniques, severely affecting preservation. However, previous research has documented a diverse array of sites. The dominant features in the area are three large community centers, defined as areas “of dense residential and public architecture that was central to a cluster of individual settlements,” (Ward 1997: 2). Such community centers are characterized by several kivas (circular communal structures), often a larger “great kiva,” (named due to its large size), and numerous rooms and pit structures over a larger area.

These three sites, Casa Negra, Shields Pueblo, and Goodman Point Pueblo, all share these characteristics. The largest, Goodman Point Pueblo, has an estimated 450 rooms, at least 115 kivas, and one great kiva (Kuckelman et al. 2008: 5). Excavations at Shields Pueblo identified a total of 28 kivas and over 150 rooms (Duff and Ryan 2000). Casa Negra has been destroyed due to modern cultivation, but the best estimate of the size of the site indicates 60 rooms (Adler 1987, 1988). These three sites are not completely contemporaneous; Casas Negra dates from A.D. 920-1140, Shields Pueblo from A.D. 1020-1260, and Goodman Point Pueblo from A.D. 1260-1280. The occupation of Shields Pueblo coincides with the occupation of Casa Negra while Goodman Point Pueblo began just as Shields Pueblo was ending (Fig 5.2).

Smaller habitation sites in this region are identified by being “occupied continuously, or for a major portion of the year” and include “...substantial architectural remains such as rooms, pitstructures, and outside work areas” (Kane 1983: 23). On average, single habitation sites are estimated to have 6 rooms. Multiple habitations sites average 14 rooms (Adler et al 1987; Adler 1988).

Modern archaeological research in the Goodman Point Region largely began with the work of Michael Adler (1987, 1988, and 1990). Information on Shields Pueblo is provided by the excavations done by Crow Canyon alongside Colorado Mountain College and has recently been completed. While the information is still being processed, field reports as well as a tentative final report is still available and provides us with a general overview of the site and its history (Ward 1997, Ryan et al. 2013, Duff and Ryan 1999; 2000; 2001). Information on Goodman Point Pueblo, as well as a majority of the sites and roads within the Goodman Point Region is made available by excavation reports, field notes as well as the finished report on the archaeological survey (Hovezak 2004, Kuckelmen et al. 2009, Coffey and Copeland 2009, 2001). Additionally, Connolly (1992) interviewed local landowners about the early settlement days and asked questions pertaining to the archaeology of the Goodman Point Region. These interviews revealed information that helped archaeologists locate potential sites, including pathways and the prehistoric reservoir at Goodman Lake. Additional information provided by Crow Canyon includes data from the Village Ecodynamics Project (Varien et al. 2007, Ortman et al. 2007) which integrates data from sites in and beyond the Goodman Point Region to illustrate spatial and temporal relationships between them.

The excavations at Shields Pueblo and Goodman Point Pueblo and analysis of Casa Negra are complemented by site surveys done by Adler et al (1987, 1988). The initial goal of the 1986 and 1987 surveys were to locate, record, and evaluate all cultural resources within the area described as the Sand Canyon area to analyze settlement patterns, estimate local populations, and identify contemporary sites (Adler 1987: 5-7). The goal of the first survey in 1986 was to record and evaluate cultural resources within a

5 kilometer radius of the site to better understand the local cultural (Adler 1987: 9), a zone that also included the Goodman Point Region.

The survey conducted the following season in 1987 also collected information from the area immediately surrounding Goodman Point Pueblo itself (Adler 1988: 9). Throughout both surveys (Adler 1987; 1988), numerous sites were discovered with select sites going through test excavations for further study. While they provided valuable evidence for those studying the Puebloans in Southwestern Colorado, Adler's (1990) specific focus was aggregation among the communities of the Sand Canyon region and the Goodman Point region.

Shields Pueblo

Excavations and research at Shields Pueblo has revealed what has been identified as a community center which integrated the Goodman Point Region during its height from A.D. 1050-1225, an era that “includes the Chacoan era influence from 1050-1150 and the post-Chacoan era from 1150-1225” (Duff and Ryan 2000: 12). Among the characteristics of Chacoan influence at the site includes thin tabular masonry walls and large rooms as well as a segment of the prehistoric road that runs directly to Casa Negra (Duff and Ryan 1999: 10). One of the characteristics that the researchers note that is missing, however, is an associated Great Kiva. While it was believed that this site served as a community center during the Chacoan-era (A.D. 1050-1150), evidence has suggested that the settlement was fairly light (Ryan et al. 2013: 34). There is evidence of a decline of settlement at this site dating to the mid-to-late A.D. 1100s, corresponding to a lengthy period of poor environmental conditions. Despite these poor conditions, however,

evidence shows persistent growth through the 1200s with structures occupied until the general region was abandoned in the late A.D. 1200s (Ryan et al. 2013: 34). The site itself was occupied from A.D. 1020-1260.



Figure 5.3: Shields Pueblo looking towards Casa Negra

Goodman Point Pueblo

The excavations at Goodman Point revealed a large site that was defined as a center for the surrounding community (Hovazek et al. 2004, Coffey and Copeland 2009, 2011, Kuckelmen et al. 2009). The site itself rests in the center of the regional road/trail “network,” and due to its size, local routes, and public architecture, likely facilitated the integration of the area (Hovazek et al. 2004: 149). According to ceramic dating, sites in

the Goodman Point unit were occupied in the period of Chaco influence (Hovazek et al. 2004: 149). The site itself was reportedly occupied from A.D. 1260-1280 (Fig 5.2).



Figure 5.4: Goodman Point Pueblo

In addition to the small cluster of sites which contain pottery, a Great Kiva, identified as the Harlan Great Kiva, was also discovered in the area along with an associated road. These sites showed characteristics of Chacoan influence. Excavations of the Harlan Great Kiva suggest that the structure was used prior to A.D. 1149 but was not initially a great kiva (Coffey and Copeland 2011: 18). While information is still being gathered and analyzed, the structure that predates the Harlan Great Kiva is smaller and may have been a Pueblo II pit structure prior to its conversion to a great kiva (Coffey and Copeland 2011: 19-20).

Roads/Trails

Adler's survey and additional research has identified seven roads/trails in the Goodman Point region. These features are diverse in design and orientation, reflecting similar constructions through the Chacoan world. Evidence for prehistoric roads is also present, making local-level site documentation imperative to avoid confusion.

The largest road is called the Casa Negra-Shields road, which, as the name suggests, is a series of road segments that appear to have connected these two Pueblo II community centers, about 3 kilometers apart. The research done at the Shields Pueblo site revealed evidence of an anomaly that lined up with what has been recorded as a road (Ward 1997: 10). Further information on this road was obtained by Marjorie Connolly (1992) in her interviews with the land owners in the Goodman Point area. Reportedly, all residents knew about the Puebloan sites in the area, including the site known as Casa Negra and the road which ran from it to "the ruins east of the schoolhouse" (what is now known as Shields Pueblo) (Connolly 1992: 42). This road, as recalled by one resident, "went right across from the big ruin south of Fulk's old homestead [Goodman Point Ruin]. It went right across that ruin, just as straight as you could go. Across our place and up across...and up that big ruin over there [Casa Negra]."

The second main road is termed the Belt-Loop road (5MT16817) due to its unusual loop appearance, but not seeming to connect any two locations in a direct manner. It has been suggested that this road may have once formed a complete circle and if the contours of the landscape are observed closely, the road does appear to extend

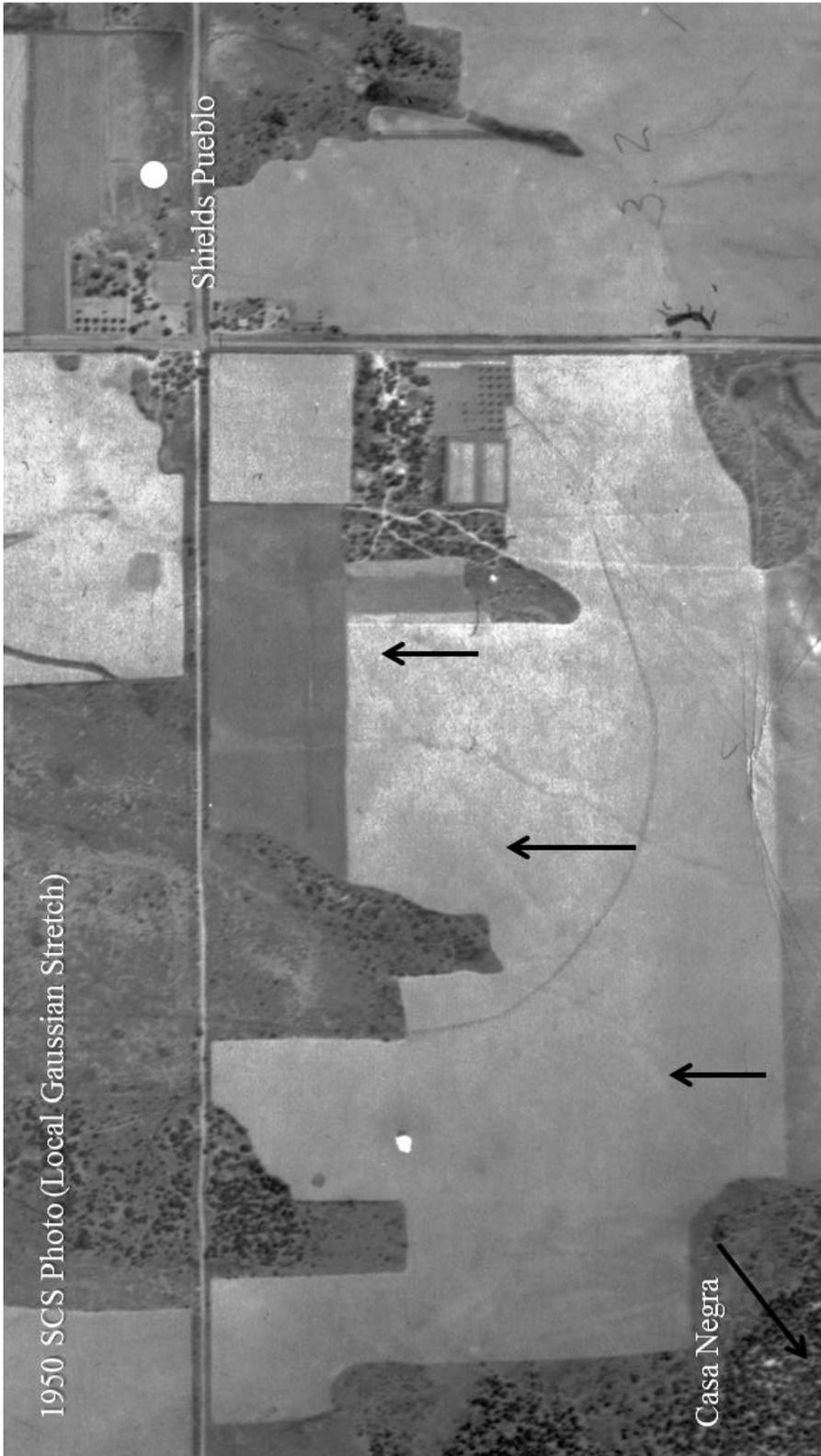


Figure 5.5: Casa Negra-Shields Road

further than the recorded segment, though still not directly connecting to any particular site (Grant Coffey, personal communication 2013). It is believed, however, that it may have connected to Shields Pueblo, just north of the Goodman Point Pueblo (Hovezak 2004: 118). While an average width of the roads approximates to 5 meters, the widest segment of this road is as wide as 8 meters.



Figure 5.6: Belt-Loop Road. Unknown as to why “Aztec Ruins” appears in the image.

Because this road does not reach the main site of Goodman Point Pueblo, it has been suggested that it is an earlier construction. It is also believed to have been used as a corridor between the local large habitations and is associated to the Harlan Great Kiva, suggesting that this road was constructed in the late Pueblo II or Pueblo III period (Hovezak 2004: 118-119, Coffey and Copeland 2007, 2011). For further analysis of this road, two units of excavation were completed on sections of the Belt-Loop road along

with collection of artifacts, sediment and pollen samples in 2010. The results are still being analyzed and it is anticipated that the results will produce more confident inferences about the nature of road construction (Coffey and Copeland 2011: 22)

Additional work done at the Goodman Point unit also identified a number of additional roads and trails, including a short segment, 5MT16792 (identified as the east road in the figure 5.7), which leads out of the northeast entrance to Goodman Point Pueblo (Hovezak et al. 2004: 80) While there is evidence that it served as access to the site in historic times, evidence that it had been graded in the past, visible in some areas as a 3 meter wide linear landscape feature (Hovezak et al. 2004: 80). It has been postulated that this road or trail may have been an important part of the Pueblo III landscape.

The largest trail in the area was identified as 5MT16816 (or the prehistoric trail in figure 3) appears to connect Shields Pueblo with Goodman Lake, which has been identified as an ancient reservoir. It also converges with another similar trail (5MT16815) at about its halfway point to connect with Goodman Point, suggesting this route was important to residents of the later pueblo as well (Hovezak 2004: 118). It was also noted that this prehistoric trail passes by habitation sites that were part of the larger community including a large Pueblo II habitation site (5MT16803) known as Pinyon Place. Further information on this trail was alluded to through interviews with existing landowners conducted by Connolly (1992: 42) told of a prehistoric road that ended at Goodman Lake.

A small road, labeled as the North Trail in figure 5.7 (5MT16812) was identified as a historic road in the Goodman Point Survey Final Report (Hovezak et al. 2004: 115). It is mentioned that while this road now serves as a visitor entrance to the pueblo, it dates

back to the early historic settlement of the Goodman Point area in the 1910's and 1920's and likely accommodated wagons rather than motor vehicles (Hovezak 2004: 118).

The Northwest trail (5MT16813) was identified as a linear landscape feature that went from Shields Pueblo to Goodman Point Pueblo. This trail was used in historic times, possibly as a route for livestock, and thus makes dating of this trail problematic (Hovezak 2004: 119). Observations that suggest a prehistoric significance with this path:

“(1) this trail’s location between two prominent Pueblo III villages; (2) the trail’s placement skirting the west edges of the architectural units of two other Pueblo III, multiple-habitation sites...; and (3) the trail’s location just west of the northernmost roomblock of [a multiple habitation site], just outside the elevated plaza/midden, and the level grading of the trail in this area,” (Hovezak 2004: 116).

It is of interest to note that the trails in the Goodman Point area are considerably narrower than the roads, measuring around 1-3 meters in width and 10 centimeters in depth on average while the recorded segments of the roads showed morphology of 3-5 meters in width and ½ meter in depth. What is consistent among all the roads and trails, however, is that dating of these sites are contingent upon the neighboring structures, such as major habitation sites, kivas, and other major sites such as community centers. Additionally, use of roadways in historic times as cattle routes or as wagon routes can create problems in terms in dating these linear features as they can create disturbance to the original form of the route. The pathways in the Goodman Point region, however, likely follow a similar engineering methodology that was used in the Chaco Canyon area.

While the trails in the region may simply have arisen as the result of repeated travel to or from the ancient reservoir at Goodman Lake, the morphology and trajectory of the roads indicate that they were very likely engineered by the local inhabitants. Nials (1983) discusses the engineering of Chacoan roadways and suggests that there is more to creating these paths than clearing brush in a linear fashion. He suggests that inhabitants would have to have repeatedly cut into the ground a little bit over time to get that straight, linear appearance that we can see in the Great North Road in Chaco Canyon and the Casa Negra-Shields road in Goodman Point. While the inhabitants in Chaco Canyon likely used markers along the roads as points of reference to get the straight feature, the Goodman Point inhabitants may not have had to rely on road markers due to the short distance between Casa Negra and Shields Pueblo.

Previous research within the Goodman Point Region has not identified any road-related features that are common within Chaco Canyon. With that mentioned, however, the presence of road related features along Chacoan roads is not unheard of outside of the Chaco Core. Hurst and Till (2002b: 17-19) have identified the presence of features similar to herraduras, avanzadas, among other miscellaneous features directly associated with some of the roads in Utah. The most formal herradura was identified “at the crest of Comb Ridge on the Jackson’s Trail crossover, on the projected line of the Bluff-to-Comb road,” (Hurst and Till 2002b: 17). It is possible that the absence of road-related features is due to the disturbance to the land via modern agriculture. As the Casa Negra-Shields Road largely exists on private land, any associated architecture could have been removed in the early days when farmers began settling in the area.

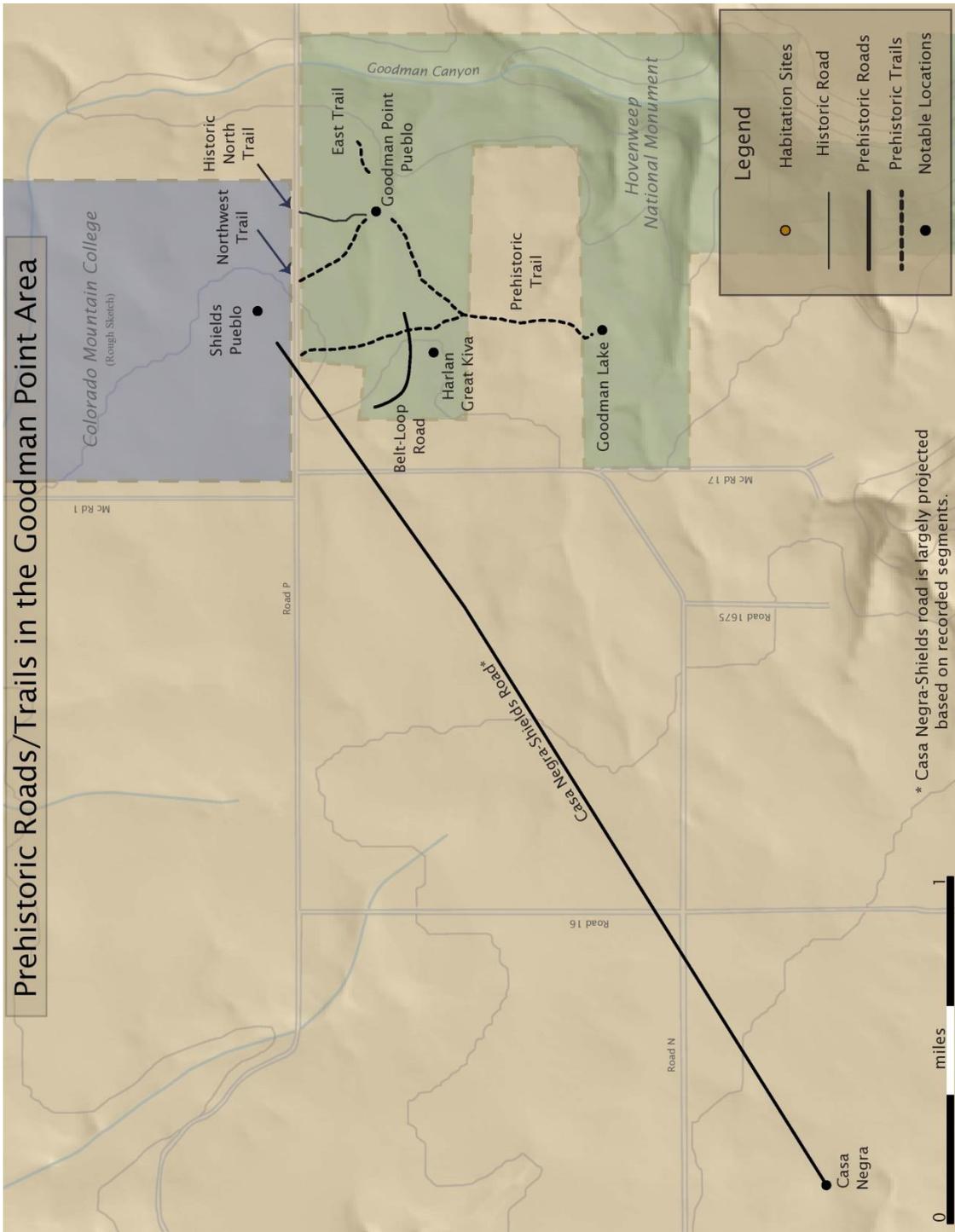


Figure 5.7: Map of the pathways in the Goodman Point Region.

Chapter 6: Analysis

This chapter will begin with a brief overview regarding the results of the fieldwork that took place at Crow Canyon Archaeological Center and the results from ground verification on site. This will be followed by the results from the GIS analysis, with particular focus on cost-path analysis. Finally, the roads and trails from the Goodman Point Region will be compared to those from Chaco Canyon to better understand how outlying Chacoan roads and trails compare to those within the Chaco Core.

Fieldwork

Fieldwork for this thesis consisted of two weeks in the summer of 2013 at Crow Canyon Archaeological Center located in Cortez, Colorado. The purpose of this fieldwork was to obtain resources stored in their archives pertaining to this research and to collect digital data containing the UTM coordinates and information pertaining to each site. The data obtained is a part of the Village Ecodynamics Project and allowed for mapping and spatial analysis of sites within the region (Varien et al. 2007, Ortman et al. 2007). In addition to collecting necessary resources for this study, ground verification of the pathways seen in the aerial imagery was necessary as well as to observe the landscape surrounding the sites.

The results from ground verification were successful and included the addition of more roads and trails than were initially planned for this research. These additions included the Northwest Trail, the East Road, and the Prehistoric Trail. The Historic North Road was added but was not considered in the research and analysis. Additionally,

noticeably differing morphology between these pathways made it necessary for the purpose of this research to create the two categories; roads and trails. The road category includes the Casa Negra-Shields Road, Belt-Loop Road, and the East Road and measure at 5-8 meters in width and 50 centimeters in depth. The trail category includes the Prehistoric Trail and the Northwest Trail and measure at 1-3 meters in width and an average of 10 centimeters in depth.

On the ground, the roads were barely discernable, likely due erosion and vegetative growth. Because of this, it was difficult to follow them, although Grant Coffey, an archaeologist from Crow Canyon Archaeological Center who is familiar with Goodman Point Pueblo, provided guidance. The trails, however, were still visible within the landscape which made it easy to walk along them. Aside from the known habitation sites, community centers, and the Harlan Great Kiva, no additional architecture that could be defined as being road-related were identified along the paths.

While access to Goodman Point Pueblo and Shields Pueblo was made possible, access to Casa Negra and the greater portion of the Casa Negra road was not obtained. This was due to the extensive destruction in that occurred from modern agriculture. Data pertaining to the sites within that area was obtained from the surveys and research largely done by Adler (1988, 1989, 1990).

GIS Analysis

To facilitate the discussion on the pathways in the Goodman Point Region, a cost-path analysis was run to analyze the trajectory of the paths to observe whether or not they align with a least-cost direction (Chang 2013: 366, Bolstad 2008: 404-409). Sources

necessary for calculating a least-cost path include a source raster that includes an end point (origin and/or destination), a cost raster that defines the cost required to travel through each cell based upon one or more factors such as topography, vegetation, etc. (measured relatively or actual), and a cost distance source, which is usually produced along with the cost raster file. The cost distance source calculates the cost of traveling from one cell to another through diagonal or lateral links. This source file also explains why resulting paths in the analysis result in zigzag lines (it only calculates linear and diagonal lines) (Chang 2013: 366, Bolstad 2008: 404-409). The latter two source files can generally be calculated with a digital elevation model (DEM) if topography is the primary weight to calculate the cost of travel.

For the purpose of this study, topography is the main relative cost-factor. This was calculated as percent rise in slope and was calculated using a digital elevation model measuring each ground cell at 9.4 meters². Vegetation (primarily pinyon pine and juniper growth) was not a weighted factored in the cost-surface as it would be difficult rationalize using modern data on growth for researching a prehistoric landscape. Two Cost-Path analyses were run using two different sources; one using Goodman Point Pueblo as the source and one using Shields Pueblo as a source. The destinations were set as Casa Negra Pueblo, Goodman Lake, and Shields Pueblo or Goodman Point Pueblo (destinations differing depending on which source was used). Using these sources, the resulting paths were calculated via cost-path analysis and were compared to the existing pathways, (e.g. Casa Negra-Shields road, the Prehistoric trail, Northwest trail, East Road, and the Belt-Loop road).

The results from the Cost-Path analysis from Shields Pueblo came to be rather inconclusive in relation to the Casa Negra-Shields road. The calculated path suggests a partial loop westward before heading towards Casa Negra, meaning that on part of the Casa Negra-Shields road aligns with a least-cost path. However, with a brief examination of the cost-surface data, this discrepancy can be explained by slight differences in the landscape resulting in the slope being slightly higher closer to Shields Pueblo than the area that the calculated path goes through. This discrepancy could not be corrected for in ArcMap and only resulted in erroneous results. Additionally, the trail that unites Shields Pueblo to the Goodman Lake reservoir also appears to be slightly off for the very same reason.

The results from the Cost-Path analysis from Goodman Point Pueblo show one strong correlation with the prehistoric trail that is connecting the pueblo to Goodman Lake. Interestingly, the least-cost path calculated between Goodman Point Pueblo and Casa Negra show a strong correlation. It should be noted, however, that while there is a strong correlation with the existing road, these two sites were never occupied at the same time. Any possible relation between these two sites may relate to a more symbolic time bridge between these two non-contemporaneous sites as detailed by the work of Fowler and Stein (1992) and Van Dyke (2008). Additionally, while there is some correlation seen for the two trails heading north out of Goodman Point Pueblo, these trails will not be examined in this study since the distance between Shields Pueblo and Goodman Point Pueblo is very small. Problems finding any possible destination for the East road, as well as the shortness of the segment, meant that it could not be examined via cost-path analysis.

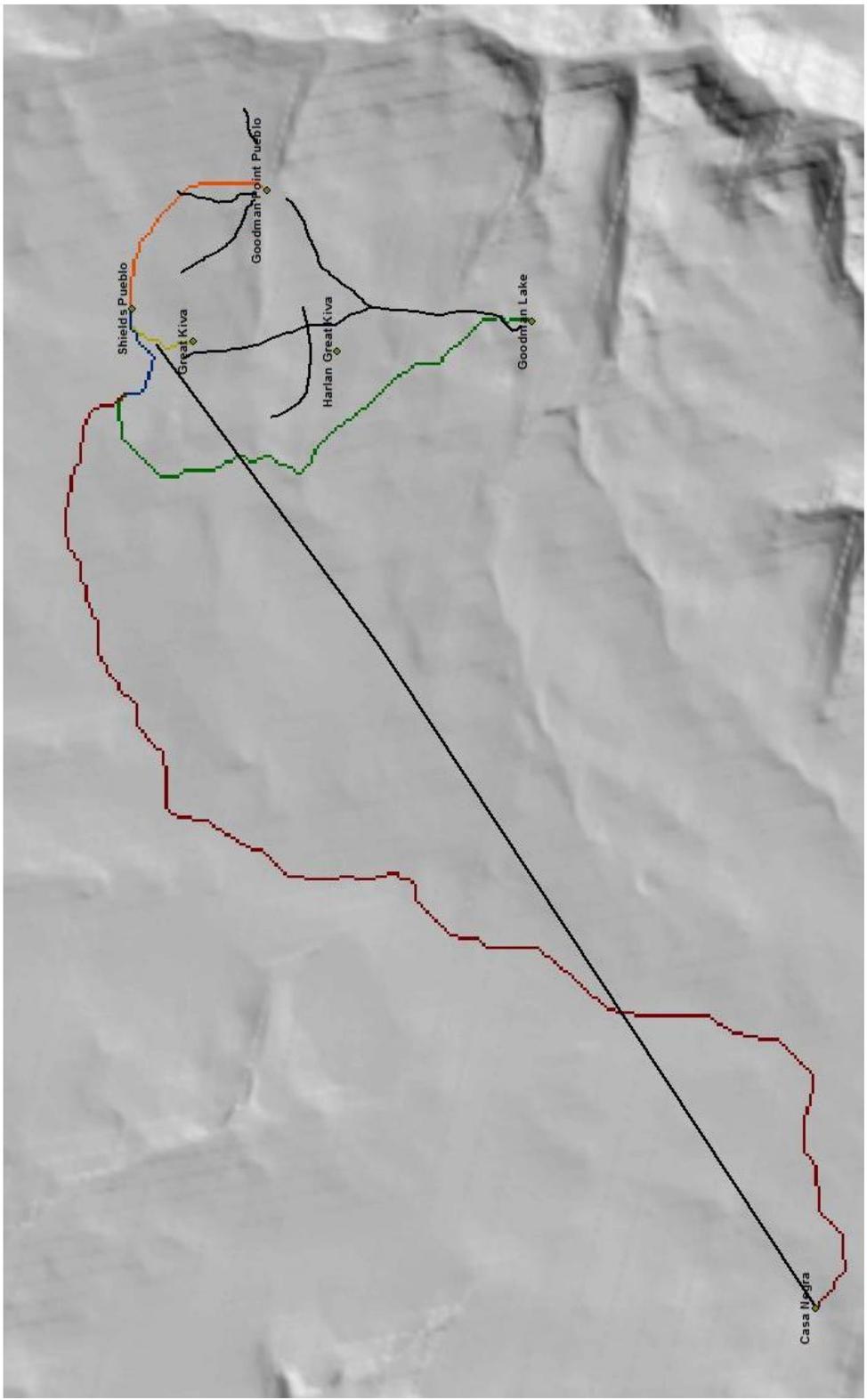


Figure 6.1: Results from the Cost Path Analysis using Shields Pueblo as the source. Colored lines represent the calculated least-cost path.

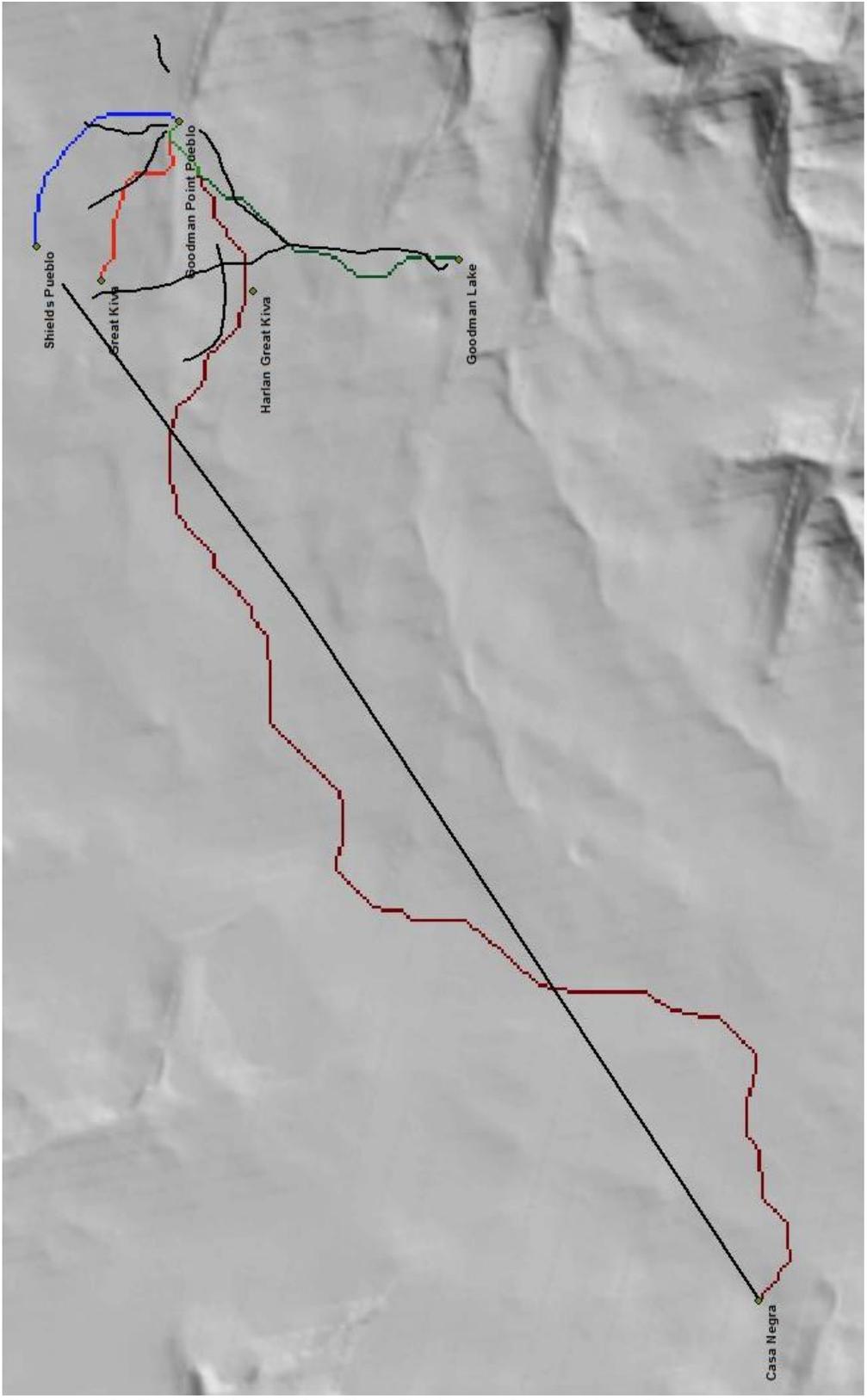


Figure 6.2: Results from the Cost-Path Analysis using Goodman Point Pueblo as the source. Colored lines represented the calculated least-cost path.

While the results from the cost-path analysis show a few correlations with the existing routes, mapping of the data on the identified sites in the Goodman Point Region show that nearly all the roads or trails link habitation sites and community centers together, whether they are directly connected or simply rest along the route. This observation draws parallels with the results that John Kantner (1997) obtained from mapping the roads and sites in and around Chaco Canyon and from Roney's (1992) observation of an integrative structure resting at either end of the roadways in Chaco Canyon. In the case of Chaco Canyon, this would have been based upon the assumption that kivas and great houses served to unify the local community. In the case of the Goodman Point Region, this would allow us to view roadways as a guide towards the local great houses. However, in the case of the Casa Negra-Shields road, we might be left wondering which great house would the traveler be guided to? Both sites were occupied from A.D. 1020 -1140 where Shields Pueblo continued until approximately A.D. 1260. If the road was constructed by the inhabitants at Casa Negra prior to Shields Pueblo, perhaps the path was intended to integrate habitation sites in the area that later became Goodman Point Pueblo.

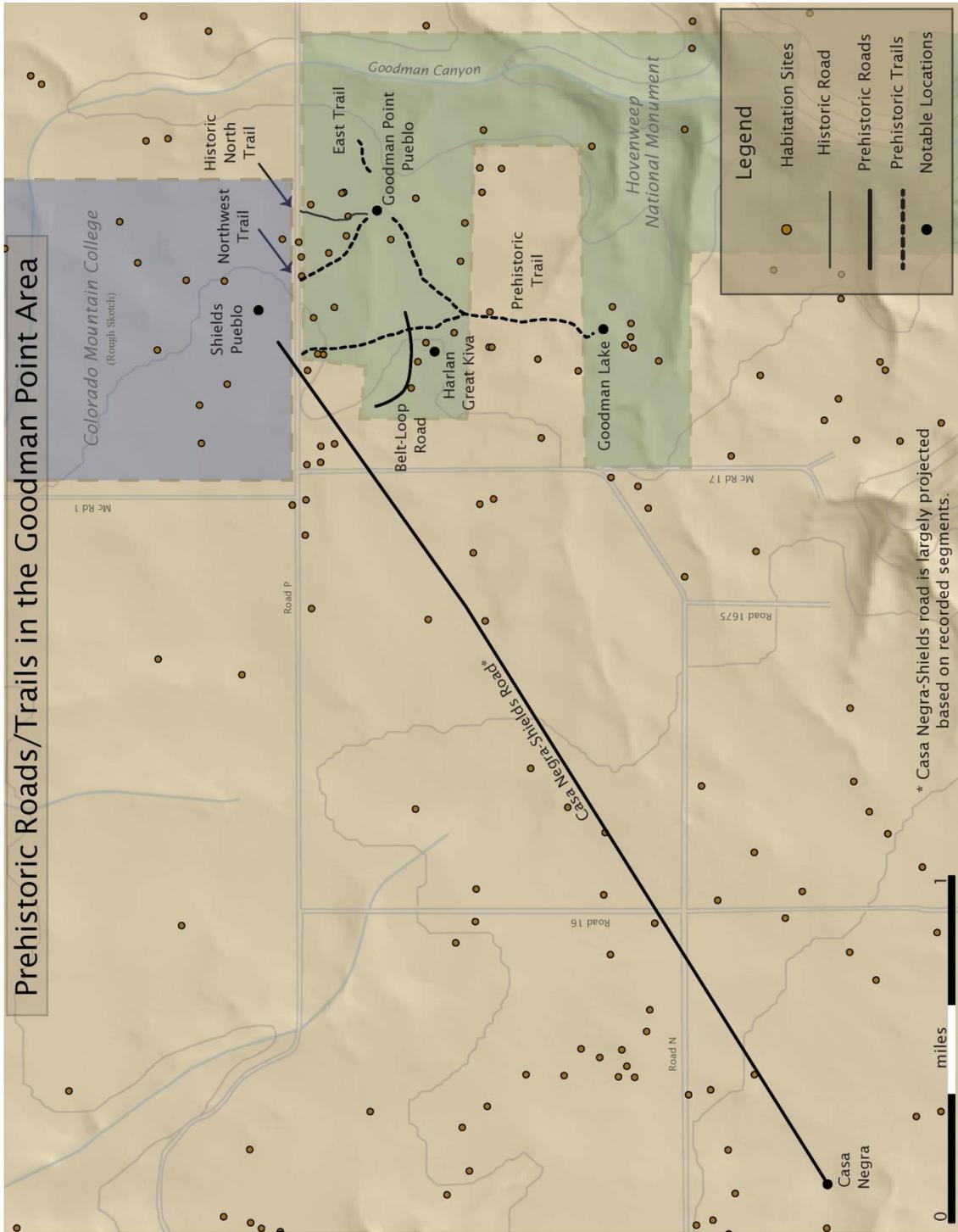


Figure 6.3: Map of the Goodman Point Region showing the distribution of sites.

Chaco Canyon and the Goodman Point Region

While prehistoric roads in the Goodman Point region may be seen as a result of Chacoan influence, some of the common elements of these features (c.f., Nials 1987; Vivian 1997a) are not present. Great Kivas and Great Houses are associated with roads, and are found at the main community centers at Casa Negra, Shields Pueblo, and Goodman Point Pueblo. However, there is a clear absence of anything else that may be considered road markers or roadside shrines, despite the fact that these features are well documented within the Chaco Canyon road network as well as associated with outlying Chacoan roads in Utah (Hurst and Till 2002b: 17). While Stein (1983) determined that Bonito style cairns were rare, one might expect to observe some road associated features in a Chaco-style road. It is possible that modern agriculture simply destroyed any road associated features that may have been along the Casa Negra-Shields road.

In terms of morphology, however, the Casa Negra-Shields road and the Belt-Loop road share similar characteristics with those in Chaco Canyon. Most of the reported segments in Chaco Canyon reported a width between 8 and 12 meters when topography is not taken into consideration (Nials 1983: 6-9). Despite this observation in from the Phase I research, Vivian and Buettner (1972) observed two different classes of roads based upon measurements, primary which measured an average of 9 meters, and smaller road spurs which averaged 4.5 meters in width. Additionally, Nials (1983) reported three different groupings based upon road widths, roads with measurements of 11+ meters, roads with measurements between 7 to 11 meters, and those with widths 7 meters and below.

It should be noted that Nials (1983) reported that the wider measurements of roads are usually observed where there is a close proximity to major sites. These wider road segments yielded measurements exceeding 11 meters (Nials 1983: 6-5). In the case of Chaco Canyon, this could be great houses such as Pueblo Alto and New Alto, which are associated with the Great North Road. The reported width of this road ranges between 11 and 20 meters (Stein 1983: 8-7). In the case of the Goodman Point Region, however, the Casa Negra-Shields road only measures a width of 5-8 meters. This measurement is nearly half the average width of primary roads and more than half the width of the Great North Road.

The measurements of the Casa Negra-Shields road are similar to those of the Belt-Loop road, which is associated with the Harlan Great Kiva. This path also measures 5-8 meters wide. Neither compares well with what has been defined by Vivian (1972) as primary roads. The smaller measurements of the documented roads in the Goodman Point Region should not be considered surprising as the characteristics of Chacoan influence at the community centers are not all present. They are, however, consistent with what Vivian denotes as a smaller road spur (1972a: 23).

The depth of Chacoan roads has been measured as the difference taken from the surface of the ground to the middle of the road. The average depths of roads measured from the survey showed a range between 10-50 cm (Vivian 1997a: 25). Nials (1983: 6-15) selected guideline of two categories, "shallow roads" at below 35 cm and "deep roads" at depths at or above 35 cm. The Great North Road, while reportedly quite wide, ranged in depth from .14 to .84 meters (14-84 centimeters), generally shallow to fairly deep (Stein 1983:8-7). The Casa Negra-Shields road, as well as the Belt-Loop road,

averaged a depth of .5 meters (50 centimeters). In this regard, they fall within the average measurements of depth of those in Chaco Canyon and would be classified as “deep roads” (Nials 1983).

It is usually mentioned by researchers that Chacoan roads are straight (Lyons 1973, Lyons and Hitchcock 1977, Ware and Gumerman 1977, Obenauf 1980a, Hayes 1981). They may suggest to some that the linearity of roads is in fact a characteristic specific to Chacoan architecture. However, it could simply mean that these pathways were just well planned and engineered to avoid major topographic barriers and thus not requiring major adjustments in their trajectory (Lyons and Hitchcock 1977). According to Nials (1983: 7-27), “minor course adjustments would have been accomplished by the means of slight angle changes.” Broad curves have also been observed in a roadways running from Penasco Blanco to Ahshislepah as well as the extending from above Hungo Pavi to a small mesa in the Chaco North area (Nials 1983: 6-27). What this suggests is that the linearity popularly seen in the roads in Chaco Canyon may not necessarily be a unique characteristic as it may simply be well planned construction.

Similarities clearly exist between the roads in the Goodman Point Region and the Chacoan core. These similarities are depth, straight trajectory, and association with great houses and a great kiva. However, the more specific features that are documented to be associated with Chacoan roads, such as road markers or roadside shrines, have not been identified within the research area. It may be possible that they were simply not used by those within the Goodman Point Region or the features have been destroyed by modern agriculture.

Chapter 7: Discussion of the Goodman Point Pathways

This discussion of the roads and trails within the Goodman Point Region will begin with a look at each of the roads individually. It will begin with the Casa Negra-Shields road, following it with the Belt-Loop road, discussing a little bit about the East road, and ending with a discussion of the prehistoric trail. After a discussion of the roads and trails, a final synopsis will be presented.

Casa Negra-Shields Road

As per the Roney model, the Casa Negra-Shields road could have physically integrated the two centers as part of one regional community. This could have been done through labor investment in engineering and maintaining these paths, affirming the idea of integration with the larger community. Evidence of Chacoan architecture is present within both community centers (Adler 1990:247).

What is known, however, is that Shields Pueblo is considered a community center or “focal location within the larger Goodman Point community” from A.D. 1050-1225 where there is evidence of dense residential and public architecture (Adler 1990:260, 1994; Adler and Varien 1994; Varien 1999a). While no great kiva has yet been identified within the Shields Pueblo unit, the Harlan Great Kiva, just to the south, is also considered as an integrative feature with the surrounding habitation sites (Adler and Varien 1994: 8). We can thus envision interaction between the communities surrounding the Great Kiva in the Goodman Point area and the community surrounding Casa Negra. This interaction may have occurred until the construction of the newer community center, Shields Pueblo, where one might argue that the inhabitants of Casa Negra abandoned the site for the

newer community. This is, however, based upon the assumption that the Harlan Great Kiva had been a great kiva prior to the occupation of Goodman Point Pueblo. If Coffey and Copeland (2011 18-20) are correct in presuming that the structure prior to the great kiva was likely a pit structure, this explanation may not be entirely accurate.

A more plausible theory on Chacoan roads argues for social cohesion, where researchers identify roads as tangible reminders of unity and as a structure of social integration (Vivian 1997b; Van Dyke 2007: 144-167; Stein and Lekson 1992: 87-100; Lekson 2006: 34; Snead 2012). A road, which is constructed at a range of 5-8 meters in width, to unite two community centers 3 kilometers apart, may have had an importance to more than just the communities at the two centers. Roney (1992) attributed a political importance to these structures of movement, the implications of integration still resonate strongly as we observe not only where this road would lead the actors, but also the sites that are along its route. Several contemporaneous habitation sites rest not only along its path, but also along the paths of the trails south of Shields Pueblo.

Grant Coffey (2010: 77) argued that use of the Casa Negra-Shields road continued well into about A.D. 1260, long after Casa Negra was abandoned, suggesting that there was a significant amount of interaction between not only Casa Negra and Shields Pueblo, but between Shields Pueblo and the greater region that this road passed through. This observation suggests that the Casa Negra-Shields road operated as an integrative feature, drawing together local populations around a new and manifesting community center, Shields Pueblo.

If we are to apply the landscape perspective presented by Knapp and Ashmore (1999: 13-15), the symbolism of the Casa Negra-Shields road might comprise of a landscape of memory, which would see this landscape as the materialization of individual or group experiences. It could also comprise of a landscape of identity, created by individuals observing this path in symbolic or ceremonial terms. The difference depends on whether or not this route was used for the purpose of drawing in the local community in the region or for expressing unity between residential sites.

Based upon the understanding of the surrounding region, the Casa Negra-Shields road may have served as a social path between several communities, the early Pueblo II communities around Casa Negra near the early structures around the Harlan Great Kiva, as well as the habitation sites between these two community centers. Thus, within this surrounding region that the Casa Negra-Shields roads can be associated with, we can define this landscape as one of social interaction. In the context of Ingold's (1993) understanding of the phenomenology of landscape, we may be looking at a social taskscape and landscape in which the actors move and interact with one another in an integrative/social setting.

One of the surprising results from the cost-path analysis showed a close correlation between Goodman Point Pueblo and Casa Negra. While the results may seem odd given that these two sites are entirely non-contemporaneous, similarities between the research by Fowler and Stein (1992) and Van Dyke (2008) begin to emerge. While there hasn't been evidence of salvaging from Casa Negra by Goodman Point Pueblo, it is possible that this route may have symbolized a reference to the shared identity of the Chacoan past (Van Dyke 2008: 234).

Belt-Loop Road

But what of the Belt-Loop road; what purpose could this road have served? Its relationship to the Harlan Great Kiva is distinctive; however, there are also a number of habitation sites along this path, closer than the Harlan Great Kiva. Like the Casa Negra-Shields road, we are looking at a roadway that has been elaborately constructed at 5-8 meters in width. However, unlike the Casa Negra-Shields road, no large sites other than the Harlan Great Kiva appear near this path. Based upon the spatial context, this road could date to as early as early or middle Pueblo II. Adler and Varien (1994) and Coffey et al (2011) have identified this vicinity as a small community, integrated through the Harlan Great Kiva. However, more recent research by Coffey and Copeland (2009, 2011) have suggested that prior to A.D. 1250, the Harlan Great Kiva may have actually been a smaller structure, possibly a pit structure. This would not suggest that there was no organization within the area. Rather, it would suggest that if the Belt-Loop Road was constructed prior to the construction of the Great Kiva, the road may have had a more social integrative feature with just the local habitation sites.

Hovezak et al. (2004) suggested that this path may have connected with Shields Pueblo to the north but the lack of further road segments in this general direction make this proposition difficult to support. If this path did indeed extend to Shields Pueblo, this may suggest that Shields Pueblo constructed and utilized the Harlan Great Kiva as an integrative feature. It may also be possible that the Belt-Loop segment merely represented a connection to Shields Pueblo, symbolizing another link to the past as the Casa Negra-Shields road may have also served to do with the Goodman Point Pueblo.

When morphology is taken into consideration with the Casa Negra-Shields road and the Belt-Loop road, it is clear that presentation by the magnitude of its construction was of great importance. Was there a more political purpose for the road that connected Casa Negra to Shields Pueblo? A road so elaborately constructed bears a close resemblance to those in Chaco Canyon where some have argued for political competition between great houses (Roney 1992; Spielmann 1993). In Roney's interpretation argues that since all roads, at one end or the other, have a great kiva or a great house, their purpose would have been not only as a display of power but also as an integrative feature. Not just in the sense that they direct attention towards the integrative structures, but also in the sense that the labor investment in creating and maintaining these paths facilitate this ideal of social integration.

While researchers have suggested that the Harlan Great Kiva served as an integrative structure for the surrounding communities, the trajectory of the path suggests a more symbolic meaning, especially as it bears a close association with the large ceremonial structure. A cost-path analysis was not run for this route as it was clear by examining the trajectory that it was not engineered in such a way as to directly connect two or more sites. In terms of cosmological models for Chacoan roads (Sofaer 1997; Marshalls 1997), the Belt-Loop road does not run in any cardinal direction nor does it appear to direct any notable structure towards the kiva. What we have is a uniquely aligned path near sacred, integrative structure.

Perhaps this unique road segment is presence enough. While Vivian (1997b) was arguing for the symbol of unity in road segments, this argument can transfer over to sacred symbolism as well. It is possible that the mere presence and shape of this road

segment was all the local inhabitants needed to establish cosmological meaning in this pathway.

When seeking to define a symbolic meaning to the Belt-Loop road, we can expect that this path was likely a landscape of identity, representing symbolic and ceremonial identities to the local inhabitants (Knapp and Ashmore 1999: 13-15). Whether or not the path merely stood as a landmark representing religious symbolism or it was actually used in ceremonies, the idea of social identity through religious symbolism would have been achieved through its presence near the Harlan Great Kiva. Contrary to that of the Casa Negra-Shields road, we are looking a taskscape that represents the activities related at the Harlan Great Kiva and the surrounding sites.

East Road

The East road (5MT16792) was identified as a northeastern corridor into the Goodman Point unit in the survey report. This road has been dated to Pueblo III (A.D. 1180-1250) based upon its association with Goodman Point Pueblo itself. No attempt was made for running a cost-path analysis for the primary reason that no sites of major habitation or significance, other than Goodman Point Pueblo, could be identified within the general area. Smaller habitation sites have been identified in past surveys to the northeast of Goodman Point Pueblo. However, these sites are not contemporaneous with Goodman Point Pueblo and date to between Pueblo II and Pueblo III (these can be seen in the corner of figure 6). Thus, no identifiable sites of contemporaneous dates could be selected as a feasible destination. However, because of the canyon immediately to the

east of the Goodman Point unit, it may be likely that this path simply went in that direction for the purpose of collecting water.



Figure 7.1: East Road

Trails

While the Casa Negra-Shields road and the Belt-Loop road in the Goodman Point region show a clear trajectory (linear or circular), the trails in the Goodman Point region appear to follow a more organic and unplanned trajectory. Additionally, since they do not

show any evidence of construction, their creation was likely the result of repeated travel between sites by those living at either community center or those within the smaller habitation sites along the path. The creation of this path would have been based upon an immediate need and best be defined as an organically evolved landscape as described by both Knapp and Ashmore (1999) and by the original UNESCO classification of landscapes (Cleere 1995: 65-6). The basic guidelines for informal paths addressed in Chapter 4 match the observations made on the Prehistoric trail which unites Shields Pueblo to Goodman Lake, an ancient reservoir 1.5 kilometers to the south. This trail also branches off to an alternate path which also connects with Goodman Point Pueblo as well.

Because it is hypothesized that these trails evolved organically for utilitarian purposes, it is difficult to apply the previously discussed case studies to these routes. If we are to look back on Trombold's and Earle's (1991) explanation of informal pathways and Hassig's (1992) work, the trail was likely created out of necessity to get to the reservoir to obtain necessary resources and may have also assisted travel between community centers and habitation sites. This necessity might also explain why a least-cost path between Shields Pueblo and Goodman Lake did not conform to the existing route. The presence of the smaller habitation sites along this path may be out of opportunity to be near a major corridor between the reservoir and community centers. This is not to preclude the idea of any symbolism that may have been imbedded through the repeated use of this trail by the local inhabitants, rather that Goodman Lake was likely a major causal factor that this trail arose.



Figure 7.2: Prehistoric Trail as it splits off toward Shields Pueblo (left) and Goodman Point Pueblo (right)

If we are to apply the theory presented by Knapp and Ashmore (1999: 13-15), we can understand this trail of necessity and representing the symbolism of memory and identity. This materialization would have arisen through the result of repeat travel and interaction with this landscape and the connecting locations at the community centers. This can be seen as a phenomenological interpretation as these experiences would be specific to the individuals who had interacted with this landscape. Because of this, we can only generalize and propose that such experiences may have been traveling to and from Goodman Lake for the purpose of collecting resources or traveling towards community centers for the purpose of engaging in community activities.



Figure 7.3: Prehistoric Trail going towards Shields Pueblo

Final Thoughts

There are notable similarities and differences between the roads and trails of the Chacoan core and the Goodman Point Region. From what has been observed on the ground via surveys and excavations, there are no observable road markers or roadside shrines in the research area. Thus, if we were to define Chacoan roads by associated features, the resemblance would consist only in the associated community structures and the Harlan Great Kiva. A possible explanation for this discrepancy is that no road

markers or roadside shrines were necessary for the construction of the Casa Negra-Shields Road. If any were originally present, however, these features may have been unknowingly destroyed by modern agricultural machinery.

The depth of the roads and their straight trajectory is an important similarity between roads in the two regions. Because the width of the roads in Chaco Canyon appear to cover such a wide margin of measurements, and the measurements of road width is fairly small by comparison, it would be hard to suggest that this is a specific characteristic derived from the Chacoan culture. When we look at road trajectory, the direct route that this path takes between Casa Negra and Shields pueblo, while it may be seen as a characteristic of Chacoan road construction, may also be because there is no reason the road would have needed to deviate from the direct route. There is no major topographical barrier that it would need to move around and if its purpose was to unite Casa Negra with Shields Pueblo, a straight line is a direct path.

Roads do not appear as a direct connection between sites. Rather, they are a made up of multiple road segments. This observation is supported by research by Nials (1983: 6-27) which reports that the supposedly straight Chacoan roads are actually made of up aligned straight segments. This was observed in the aerial images of the Casa Negra-Shields road which showed at least three segments. For the Belt-Loop road this would suggest that the segment was indeed all that was needed for its purpose in symbolizing cosmological meanings to be fulfilled.

In contrast, trails in the study area are direct and contiguous paths rather than a compilation of segments. This observation suggests that there is a clear difference in

intent and function between roads and trails. The prehistoric trail appears to have been constructed through frequent foot traffic between both Shields Pueblo and Goodman Point Pueblo and the Goodman Lake reservoir. As such, this trail was used for the purpose of travel and was just wide enough to support one individual in front of another.

As it stands with the material presented on both the selected case studies from Chaco Canyon and with the observations from the Southwest Colorado, the road and trail system in the Goodman Point region demonstrates multiple functions and meanings that depend upon connected sites and morphology. While the Casa Negra-Shield road may have served to unite the larger community with Shields Pueblo, it may have also served as a tangible symbol of sustained ties, not just to those who traversed this path, but also to those who observed its purpose. In the later Pueblo III period, inhabitants of the Goodman Point Pueblo may have also observed this road as a symbolic connection to earlier Pueblo II period at Casa Negra.

However, the prehistoric trail served a more prosaic function, that of making a connection to the water resources at Goodman Lake. Branches of this trail leading towards Shields Pueblo and Goodman Point Pueblo may have also resulted in subsequent travel from smaller habitation sites along this path towards the community centers. This may have also resulted in this trail becoming a part of the larger social or political landscape that resulted in larger scale integration by the community centers. Thus, while its creation may have been utilitarian, a sense of shared identity would have been instilled into this trail through its connections between habitation sites and Shields Pueblo and Goodman Point Pueblo.

In the case of the Belt-Loop road, a more cosmological purpose appears to be the most likely explanation, reflecting what Knapp and Ashmore (1999: 13-15) call a landscape of identity. This identity would be represented through the local inhabitants recognizing and maintaining this feature as symbolic of cosmological ideals. Experiences would have been created by the local inhabitants either using it to travel to the Harlan Great Kiva or by simply acknowledging its symbolic purpose (Van Dyke 2008; Renfrew 2001; Marshall 1992; Sofaer et al (1989: 373). While the recorded segment of the Belt-Loop road is short in length and it doesn't appear to directly connect any large site to the kiva, these may not have been the important factors to the local inhabitants. The simple recognition of cosmological symbolism would have been enough as it would have been about the journey alone for the travelers, not about length or about its direct connection to a large community center.

The symbolism that is played out in these paths is created through repeated interaction with these landscapes. It is also the individual and group experiences that help create this symbolism. This relationship is best expressed by Ingold: "...the landscape tells – or rather is – a story. It enfolds the lives and times of predecessors who, over the generations, have moved around in it and played their part in its formation" (Ingold 1993: 152).

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